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A YALE PAPYRUS IN THE BEINECKE RARE
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AMERICAN STUDIES IN PAPYROLOGY

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**A Yale Papyrus (P Yale III)
in the Beinecke Rare Book and Manuscript Library III**

by
Paul Schubert

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by
PAUL SCHUBERT

American Society of Papyrologists
Oakville, Connecticut

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For John R. Rea and Revel A. Coles
the Dioscuri of the Ashmolean



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PREFACE

This publication has been waiting for more than thirty-five years. While I was working on my doctoral thesis (*P'Douc = Les archives de Marquis-Léonidas Dugas*), which dealt with a family living at Philadelphia in the second and third centuries A.D., my attention was drawn to John Dates' preliminary reports on what has now become *P'Yale III* (137 thenceforth 137). At the time (1988) he had already passed the project on to Susan Stephens, who again kindly allowed me to include in my dissertation whatever material I would find helpful from her own work. I made use of this source of information in *P'Douc* 44-45, where I referred to what was then known as *P'Yale III* 206. It should therefore be clear to the reader that the present publication owes much to the draft versions of both Dates and Stephens, to whom I extend my warmest thanks for having given me full access to their work, although I cannot acknowledge their contribution in detail.

When Roger Bagnall approached me in 1995 asking me to take over the publication of *IJF*, I seized what I thought would be an opportunity to pay back my debt to my American colleagues. Little did I suspect that this

[illegible]

debt, far from being settled, would actually increase to a size where compensation could not even be considered. I will nevertheless gratefully acknowledge some of the help I received while working on this book.

In addition to giving this project a fresh start, Bagnall read several versions of the book in draft form, checked for me some readings on the original in New Haven, and was a constant inspiration throughout the process of writing. Some will recognize his trademark number-crunching approach in the introduction, even though the disciple's struggle with quantitative analysis will easily be distinguished from the master's achievements in this particular area. Since such arcane formulae as $P = C/mk$ were Greek to me when I started working on 1.37, I needed a crash course in setting up statistical tables; this was provided by my colleague François Gosselin, who deserves special thanks for his patience while dealing with my eager but clumsy pupil.

In the course of writing the book, I benefited from discussions with Jean-Jacques Aulsen, Alan Bossman, Don Colbuck and Michael Sharp. The latter very kindly showed me a draft version of his work on Philadelphia, which has been published in the meantime.

Even at the ripe age of thirty and some years, a scholar can still learn from his mother: some took the pain to weed out quite a number of mistakes from my less-than-perfect English.

The two anonymous readers who went through the book in the final stage of writing deserve special thanks for offering, always with great tact, more suggestions and corrections than I could decently confess to the reader. My only frustration lies in the fact that anonymous readers, by definition, do not get due credit attached to their names. I take solace in the

thought that I can name a third reader, Ann E. Hanson, going well beyond the call of duty as editor of this series, she read the whole manuscript in detail and improved it in many ways. I would also like to thank Gregory Rowe for having read through the last set of proofs. All the same, I take full responsibility for any errors that remain.

Finally, I would like to thank the Benedicke Rare Book and Manuscript Library and its curator, Robert Babcock, for allowing me to publish this papyrus.

EDITORIAL CONVENTIONS

The text in this volume is edited according to the standard "Leiden" system described by F. G. Tomer, *Greek Papyri* (Oxford 1986), 118ⁿ 188 and 203.

α|βγδ - letters about the reading of which there is a genuine doubt, or letters which are so mutilated that without the context they might be read in more than one way

ω illegible letters, of which the number is estimated

1 - missing letters, of which the number is estimated

{α|βγδ} - letters restored by the editor of the text

α|βγδ - letters or words omitted by the scribe and supplied by the editor

α|βγδ - resolution of abbreviations

[α|βγδ] - erasures by the scribe

α|βγδ - interlinear additions

Papyrus editions and papyrological journals are cited according to the *Checklist of Editions of Greek and Latin Papyri, Ostraca and Tablets*, ed. F. F. Gares / R. S. Hagnall / W. H. Willis / K. A. Worp (*BASP* Suppl. 7, Atlanta 1992).

INTRODUCTION

This papyrus is a return of taxable private land for the village of Philadelphia dating from AD 216/17. Except for a few damaged places and possibly the lack of a first introductory column (see below), the register is complete, and thus provides us with an exceptional overview of landholding in this village. The papyrus was purchased in 1931 in Cairo from the dealer Maurice Naliman, who had apparently had access to a large find from the village of Philadelphia in the Arsinoite nome. The bulk of *P. Price*, found also in Philadelphia and dating from the same period, was bought from Naliman by the "papyrus cartel" for the British Museum in 1922. ¹³⁷ was already presented in its outline in the 1960s (see above, preface, footnote 1), but publication has been delayed ever since.

Description

¹³⁷ is a roll with seven columns of writing on the recto, running along the fibers; the verso is blank. At the time of discovery, it was one single piece, then was cut into four pieces, each approximately 32 x 25 cm, before being eventually reassembled in a single frame. The roll is in a good state of preservation, except for col. I, which has lost its lower left corner and is damaged by a number of holes. This seems to imply that, as should be expected, col. I formed the outer part of the roll when it was found. The papyrus shows throughout varying degrees of wear, abrasion or puncture.

Comparison with *P. Oxy.* II 659, Soknopaiou Nesos, AD 229, however, suggests that there may have been yet another column at the beginning of the roll. In this parallel document, the first column gives some information

Except for the last two columns, the ink is dark and easily legible. The writing, running along the fibers, is in a fluent, fast cursive hand, and makes use of many abbreviations. Parallels can be found at the beginning of the third century A.D.

It should be noted that, when employing fractions, the scribe has two ways of writing $1/2$: i.e. $\frac{1}{2}$ (not in the form $1/4$) is always followed by another smaller fraction (see lines 8, 61, 95, 107, 140). On the other hand, $\frac{1}{2}$ is never followed by a small fraction (except when combined with $\frac{1}{4}$ to make $3/4$). On the whole, small fractions appear relatively seldom, in contrast to *P.H. inv. Landbesen*.

Contents of the register

The register is self-described as a "list of persons of payments in cash and in kind" (lines 7-8) persons being prepared to be sent to Syria" to the armies of the emperor Caracalla, drafted by Archelus Pasion, village scribe of Philadelphia. The document is dated at the end of the 25th year of Caracalla, i.e. A.D. 216.¹ The list itself consists of three parts: first, five entries regarding Alexandrian magistrates; then a dozen entries with local magistrates and people of archon rank (metropolitans); and finally a list of all other landholders in alphabetical order. From the available evidence, it seems that alphabetical ordering was introduced by Alexandrian scholars, but our overall picture of this question could be distorted by the fact that

¹ See e.g. W. Schubert, *P.O.R. 140* (A.D. 216), *P.O.R.* 25, pt. XXIII (on condition of similar hand). This is followed by A.D. 216, followed by the date of 137. The best parallel for the writing of the date is *P.H. inv. 175* (Philadelphia?), A.D. 199. The columns containing the date are not completely parallel letters.

the relevant documents come mostly from Egypt, which has provided us with the bulk of papyri. In any case, lists seldom follow a strict alphabetical order; usually, only the first two or three first letters of each entry are taken into account.¹ For 137, only the first letter of the name is relevant to the order in which the names appear. The entry $\kappa\acute{\epsilon}\eta$ πορνιστὶ ("hears") is recorded under $\kappa\alpha\pi\pi\alpha$, and not following the name of the person whose hears are mentioned.

In all three parts, the document specifies for each name, on the same line, the surface of grain land $\kappa\alpha\tau\alpha\kappa\eta\gamma\gamma\acute{\iota}$ and orchard land $\rho\acute{\alpha}\nu\kappa\alpha\pi\eta\gamma\gamma\acute{\iota}$ under ownership. In a register of similar purpose, *P. Stras. VI* 688, drawn up in 216, a levy is estimated in two categories: $\epsilon\chi\kappa\alpha\tau\alpha\kappa\alpha\gamma\gamma\acute{\iota}$ ("in grain") and $\epsilon\chi\delta\alpha\gamma\gamma\acute{\iota}$ ("in cash"). The owners are identified by the names with which they were known in the records and in most cases a patronymic or

¹ See I. W. Daly, *Constitution and History of Urbanization in Antiquity and the Middle Ages* (Oxford University Press, 1968), esp. 35-59; H. Hering, *Die hochepigraphische griechische Literatur der Hellenen* (H. Mann, 1975), 35-41; R. B. Harnack, *Die christliche Mission und Expansion im Altertum* (1893; repr. 1962), 309; G. Postlke, *Epigraphische Studien* (1962), in *Wiener Studien*, 37, 1991-98. The first instance of lists in alphabetical order is *P. Oxy. XV* 1802-41, III-V45; see Daly 50. For lists in alphabetical order in school texts, see R. C. Beatty, *Weights, Measures and Students in Graeco-Roman Egypt* (Ann Arbor, 1977), 36; *Atti dei Congressi*, 32-33.

² This seems to be a normal practice; see e.g. *P. Hercul. I*, 1-207, 400, and 610-150.

³ See M. Sharp, "The Village of Philadelphia in the Eastern Troad and Population in the Second Century," in A. K. Bowman, J. Rostovtzeff (eds.), *Archaeology, Topography and Problems in Hellenistic and Roman Asia Minor* (Oxford, 1960), 50-192, esp. 188.

matronymic, social status, name of the master (for slaves), military status, profession, place of residence, heirs. There does not seem to be any straightforward rule for identification. People were probably listed in the same way that they were best known in the community.

Strictly speaking, the heading does not fit the actual contents of the register: no "payments in cash and in kind" are listed in the text. The easiest explanation for this apparent discrepancy is that the register was drafted to assess the value of landholding for each individual in the village. A contribution would be exacted from every owner of private land. The register does not specify the name of the tax that will presumably be levied on the landowners of the village. Lists issued for the collection of taxes, naming the individual taxpayers, the objects taxed, and sometimes the sums to be exacted, were called *oğuznıqıqı* (oğz' nıqıqı). Similar lists are to be found which are not explicitly called *oğuznıqıqı*. In the case of our register, the heading seems to imply precisely that there is no standard way of naming this unusual contribution.

* Instances of this are found *Pat. IX* (c. 1100) Arslan, AD 22, *Gr. P. Liv.* 30 (Arslan name), AD 267 (only Soknopaiou preserved), *HGJ. II* 598 (Arslan), AD 2344 (Arslan, *Pat. XXI* 58 (Soknopaiou Nesos), AD 2433 (Arslan, *Pat. XXI* 174 (Soknopaiou Nesos), AD 248 (Hb50 (Soknopaiou Nesos), AD 2296, *HGJ. XII* 2252 (Polichniai, Arslan), AD 2296236 (PKI 53 (Soknopaiou Nesos), AD 2153, *HGJ. I* 138 (Arslan name), *HGJ. AD. Pat.* XIX 224 (Oxyrhynchus), AD 28346.

See *P. J. and III* 604, p. 70 (Karkadion, Polichnia, Egypt), AD 27; *P. Coll. Pat. 12* Karanis, AD 2324.

On the overall question of auto-logistics at this time, see P. Beitz, *Neubau der römischen Weinstocklagen in der röm. Prov. Judäa* (Münchener Beiträge zur

Historical setting

This document is dated to the 25th year of Caracalla (A.D. 216/7). In its heading, it mentions payments to be sent to Syria to the emperor's army, obviously in preparation for the Parthian war in the course of which Caracalla was assassinated (8 April 217).¹ Contributions (mainly wheat) for the emperor's campaigns could be used not only to support the army in the area of actual combat, but also to support the series that had to accommodate the army along the way.² It has also been argued that an army did not cost much more when moving, and that wars were actually

¹ Unzelshöfer 35. Stollard 1988: 191–194. M. Jankelmann, *Die Provinzialverwaltung des kaiserlichen Staates und der Provinzialverwaltungen: Municipien, Städte und Kolonien* (1997), 81–85. A. K. Whitworth, *The Roman Army in the West, AD 100–AD 200* (1997), 11. P. Roth, *The Logistics of the Roman Army, AD 100–AD 200* (Cambridge Studies in the Classical World, 23) (London: Bristol, 1992).

² See A. Marnett, 'La chronologie des départs militaires de Caracalla', *ANRW* 32 (1987), 207–302, and *Essays on the Roman Empire* (1998), 27–30, 19. K. von R. Kienast, *Rome to Byzantium* (Darmstadt: Dröschner, 1982). H. Wiegman, *Rome to Byzantium*, 1. Marnett (1982), 301–308. F. Millar, *The Roman Near East, 30 BC–AD 638* (Cambridge, Mass.: London, 1993), 147–148.

³ See J. Kneisl, *Untersuchungen zur Logistik und Kommunikation: Heere und Provinzen des römischen Reiches* (1977), 1–10, 23–24, 30–31. St. Kathrein, *Antiquae* (1991). Also Roth (above footnote 2), 17–19.

217). One of the individuals listed in the register, Longina Thermouthatou, was dead by 7 April 217 (see note to line 19). We thus find confirmation of the fact that the register was drafted at the latest at the beginning of April 217.

Contemporary texts pertaining to the population of Philadelphia

Many individuals listed in this register appear in other contemporary documents already published. While the most obvious cases are listed in the notes, the reader might find it useful to have a short survey of the principal relevant documents:

- *Brit. Mus.* VII.1617 (A.D. 227; see note to line 17)
- *P. Dac.* 44 and 45 (dated before A.D. 246² on the basis of 137)
- *P. Hamb.* III.225 (II + III A.D.)
- *P. Ross. Georg.* V.58 (beginning of III A.D.)
- *P. Ryl.* II.208a

This last document is ascribed tentatively to the Antonine nome by its editors, and dated to the third century A.D. Comparison of some names found both in 137 and in *P. Ryl.* II.208a shows that the latter must come

² On the date of *P. Dac.* 44-45, page 227. Prof. M. Mantiachi kindly provided a photograph of a plate of *P. Ross. Georg.* V.58. This original photograph is kept at the Library of Papyrology of the University of Toronto. As a courtesy to Prof. Mantiachi, the paper on which is kept in Folios of the Manuscripts Institute of the Academy of Sciences of the Republic of Ukraine. The survey describing *P. Dac.* 44-45 (A.D. 228) corresponds with the beginning of the third century.

from Philadelphia, and should be dated more precisely to the beginning of the third century.

P.R.C. II 206a

137

2. <i>Ἐπειροῦ</i>	86. <i>Ἐπειροῦ</i> or <i>Ἐπείρου</i>
5. <i>Ἀρκαδίας</i> or <i>Ἀρκαδίας</i>	87. <i>Ἀρκαδίας</i> or <i>Ἀρκαδίας</i>
6. <i>Συλλυαίας</i> or <i>Συλλυαίας</i>	186. <i>Συλλυαίας</i> or <i>Συλλυαίας</i>
6. <i>Συλλυαίας</i> or <i>Συλλυαίας</i>	188. <i>Συλλυαίας</i> or <i>Συλλυαίας</i>
9. <i>Μεσσηνίας</i> or <i>Μεσσηνίας</i>	106. <i>Μεσσηνίας</i> or <i>Μεσσηνίας</i>
11. <i>Εὐβοίας</i> or <i>Εὐβοίας</i>	87. <i>Εὐβοίας</i> or <i>Εὐβοίας</i>
12. <i>Ἀρκαδίας</i> or <i>Ἀρκαδίας</i>	186. <i>Ἀρκαδίας</i> or <i>Ἀρκαδίας</i>
13. <i>Συλλυαίας</i> or <i>Συλλυαίας</i>	188. <i>Συλλυαίας</i> or <i>Συλλυαίας</i>
13. <i>Ἀρκαδίας</i> or <i>Ἀρκαδίας</i>	87. <i>Ἀρκαδίας</i> or <i>Ἀρκαδίας</i>
14. <i>Ἀρκαδίας</i> or <i>Ἀρκαδίας</i>	87. <i>Ἀρκαδίας</i> or <i>Ἀρκαδίας</i>
15. <i>Ἀρκαδίας</i> or <i>Ἀρκαδίας</i>	186. <i>Ἀρκαδίας</i> or <i>Ἀρκαδίας</i>
16. <i>Ἀρκαδίας</i> or <i>Ἀρκαδίας</i>	87. <i>Ἀρκαδίας</i> or <i>Ἀρκαδίας</i>

The misspelling in *P.R.C. II 206a* 137 for *π* is further argument of need for the Archaic origin of the document.

A word of caution regarding the use of statistics in the register

The register is in a relatively good state of preservation. The bottoms of two columns, however, as well as some figures, have been damaged. When a figure is partially damaged, the legible part has been recorded; this means of course that the figure is a minimum, to which one would add the missing part of the figure if it were available.

It should also be noted that this register does not include the whole population or even all landowners of Philadelphia, but only private landowners.¹ It is therefore difficult to use it for studying the population of the village as a whole. For instance, one cannot draw conclusions on the importance of the Roman element among the whole population in the village, but only among owners of private land. Also, statistics based on the level of inequality in land distribution among private landowners in the village cannot be extended to the whole population of the village without some sort of weighting for which we do not have reliable criteria.

Land in Philadelphia

Line 8 of 137 provides us with a total in aoures of private land in Philadelphia, divided between grain land and orchard land. These figures can be compared with the totals obtained by adding the various entries in the register.

	total indicated in line 8	total from legible entries (incl. land without entries)
grain land	1,862 + 1,640 = 3,502 aoures	3,502 aoures
orchard land	1,262 + 1,000 = 2,262 aoures	2,262 aoures

The register is complete (with both beginning and end clearly marked), and only a few entries are illegible. In the case of orchard land, the discrepancy between the total from legible entries and the total as indicated in line 8 (ca. 94 aoures or 12%) might be explained by the fact that a few entries are missing. Considering only the second category of landowners (peasants, *isqapras* and *epiqapras*), it is possible to account for part of the missing orchard land. Orchard land on the list for this category totals 126.75 aoures for 10 entries (including cases where persons do not own any orchard land) on an average of about 13 aoures per entry. If one counts three missing lines at the bottom of col. 1—7 entries for orchard land are missing, which could give about 89 aoures (using the same average as for recorded entries). This is close to the 94 aoures that we left unaccounted for, and does not include a few missing figures in the third category (ordinary inhabitants). This tedious calculation however does not take into account the possibility that the list of metropolitan magistrates could end at line 27 (see note on line 28).

For grain land, we are left with a larger discrepancy between the total announced in line 8 and the total obtained by adding the individual entries (ca. 770 arourai or 2000; the missing entries seem too few to account for this discrepancy). The three categories of people have to be examined separately to allow a proper assessment of what could be missing in the damaged part of 137. The first group ($\epsilon\gamma\gamma\alpha\sigma\tau\epsilon\tau\epsilon\iota$ $\lambda\acute{\alpha}\gamma\alpha\sigma\delta\epsilon\iota\tau\epsilon\iota$) is almost fully preserved, and only a few *arourai* seem to be missing from the list. There is more to be recovered from the second group ($\epsilon\gamma\gamma\alpha\sigma\tau\epsilon\tau\epsilon\iota$ $\epsilon\gamma\tau\alpha\tau\epsilon\tau\epsilon\iota$ $\kappa\alpha\iota$ $\epsilon\gamma\gamma\alpha\sigma\tau\epsilon\tau\epsilon\iota$), since the bottom of col. I is damaged. Nine preserved entries add up to between 320 and 400 *arourai*, depending on the surface to be counted for Aurelia Titania (line 23: $\epsilon\gamma\tau\alpha\tau\epsilon\tau\epsilon\iota$); if we assume a minimum of 112 *arourai*, we therefore could have an average of between 38 and 44 *arourai* per entry (taking line 26 into account, where there seems to be no grain land in the hands of the person listed). If one includes 3 missing lines, there are 8 entries missing for grain land in the bottom part of col. I, or the best of cases, this amounts to about 352 *arourai* that could be lacking from the register. We are still far from the missing 770 *arourai*. If one turns to the third group (ordinary inhabitants), owners have an average of about 16 *arourai* of grain land; eight entries are missing, not taking into account small losses (under 20 *arourai*). This means that we can probably account for at least another 128 *arourai* missing. Altogether, this adds up to 480 *arourai*; another 290 *arourai* are still missing. Ninety *arourai* tentatively attributed to Aurelia Titania (line 23) bring this down to 200 *arourai* (roughly 8% of the ca. 3820 *arourai* given in line 8). If one remembers that small losses in the figures (under 10 *arourai*) have not been taken into account, and that there could be a few very wealthy landowners in the missing part of col. I ("local magistrates and persons of arcton rank"), it

seems at least possible to account for the discrepancy between the total indicated in line 8 and the total resulting from adding all entries. One possibly wealthy owner who is conspicuously missing from the list of Alexandrians is Posidonios; his agent Eudamion is mentioned in line 78. Posidonios is a large estate owner, and a prominent Alexandrian.¹ There are however no missing entries for Alexandrians. It seems that Posidonios owned an estate in Philadelphia in AD 227.² Other agents of Posidonios are known (see Rathbone [footnote 19] 75), but Eudamion is known from no other source as Posidonios' agent.

The amount of private land is larger than that of most other villages for which we have evidence (with the exception of Karanis).

¹ See O. Mørholm, *On the Life of Rutilius Placidus, Rutilianus, and His Family*, *Acta Classica* 11 (1968) 1-11. A. S. 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 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2992, 2993, 299

source	date	village	total grain land	private land	% private / total
<i>P. Bech. Lethe</i> 1.1 + 6 + <i>P. Mtrac.</i> VII 493	A.D. 1589	Theadelphia	6350.42 ar. ²	2161.16 ar.	34
<i>P. Bouz.</i> 42.7 ²	A.D. 167	Proteomas Nea	7924.08 ar.	1465.03 ar.	17
id		Heta Nesos	4080.72 ar.	1337.20 ar.	32
id		Dryinos of Heta Nesos	1760.25 ar.	622.25 ar.	35
id		Dryinos of Kerkiras	846.72 ar.	267.25 ar.	31
<i>P. Mich.</i> VI 372	A.D. 179/80 or 211/12	Karanis	11500 ar. ²	4632 ar.	40

The proportion between private land and the total surface for these villages oscillates between 32% and 48%. The total for grain land in Philadelphia is given as 3826 arouras. With due caution given to the fact that the data available is half a century older than 137, it may be possible to suggest a figure between 7970 and 11956 arouras (i.e. between 22 and 33 km²) for the total surface of land under cultivation in Philadelphia. In other words, if this assessment is reliable, private land in third-century

² See D.W. Rathbone, "Villages, Land and Population in Ptolemaic-Roman Egypt," *Pr. Phils.* 21 (1980), 103-132, esp. 113-135.

³ See A.C. Johnson, *An Economic Survey of Ancient Rome: Roman Egypt to the Reign of Diocletian* (Baltimore, 1936), 58-59.

⁴ See Rathbone (above), footnote 22, 132-134.

Nummissius, goldsmith, 80 arouras of grain land, 8.5 arouras of orchard land; line 132. Mevia Clementina, 73 arouras of grain land, 14.5 arouras of orchard land; line 200. Flavia Saraptris, 66 arouras of grain land, 3.75 arouras of orchard land. There are also several Autehi. Comparison with other documents where the same people occur shows that the full names have sometimes been abbreviated. For instance, the egyptinastarch Papyrus of line 22 is called Matens Aurelius Papyrus in *BGH* VI 16561 (Philadelphia, A.D. 213/4). Given the fact that this list was drafted only a few years after the *Constitutio Antoniniana* of 212, and also since it did not have any direct influence on the civic status of the villagers, it seems difficult to draw any firm conclusion from the presence or absence of a Roman name. It is quite likely, however, that rich women with a Roman name, i.e. Mevia Clementina or Iulia Terentia belonged to a family which had been granted Roman citizenship before the *Constitutio Antoniniana*. Caracalla's edict had the effect that, at least from 211 on, everyone in Egypt (without mother's name) was entitled to the *nommen* Aurelius; this can be observed in documents where full status designation is expected. In the case of this register, we can assume that every person in

[illegible][illegible]

[1] N. J. R. Bagnall, *Algebraic Combinatorics*, Gordon & Breach, London, New York, 1992.

[2] R. M. Adams, *Novikov's Theorem on Periodicity*, London, New York, 1975, p. 12.

the last (except for slaves and those with a *nomen* other than Aurelius) was also entitled to the *nomen* Aurelius. There was clearly no point in indicating it in every case.

19) Alexandrian and metropolitan magistrates

The *ἐργασταὶ Ἀλεξανδρείας* (Alexandrian magistrates) in all likelihood do not live in Philadelphia, but own land there.¹ Other documents where they also appear show that some of these are individuals of high rank in Alexandria. Although three out of five names listed under this heading correspond elsewhere to Alexandrian magistrates, it is not possible to show that the other two are definitely *not* Alexandrian magistrates. In any case, a high position in Alexandria does not prevent them from shouldering some responsibility in the Arsinoite, for instance in tax collection.

As for *ἐργασταὶ ἐκ πόλεως* and *ἐργασταὶ*, the first sub-group seems to be opposed to the *ἐργασταὶ Ἀλεξανδρείας*. By "local" one should understand not "living in Philadelphia", but "from the same metropolis". The second sub-group, *ἐργασταὶ*, could refer to people who belong to a family which has provided magistrates of archon rank (see below, note to line 15). For instance, Antheia Titania (line 23) is known from other documents (*P. Habesh* 1.15 and 16) where she is acting with a guardian, her son Chablius, a.k.a. Ptolemaios, ex high-priest of the city of the Arsinoites.

¹ See Richardson (above, footnote 2), 107-108, and the new edition of P. Oxy. 1.7 (forthcoming).

² See Antonius Hermeros, a.k.a. Apollonios of 107, who owes two *εὐχέρειαι* for the *ἐργαστὴν ὑπὸ φέρον* in the Arsinoite *οὐκ ἐκτεταγμένον* A 10.210 and 219 (*P. Oxy.* 11.85) (p. 48).

Taken at face value, the headings suggest that all the people listed in these two first sections are either magistrates or related to magistrates, in Alexandria or in the nome capital. It is nevertheless tempting to draw a parallel between the three categories of the register and the three main categories of civic status in Roman Egypt: Alexandrians (and more generally citizens of the Greek *politeia*), metropolitans and villagers. The difference of status induces separate ways of assessing the tax rate for each category; this is precisely what may be at stake in 137.

c) Soldiers and veterans

Of the 197 owners listed, 36 bear some relation to the army, including 5 soldiers (see below, note to line 48), 16 veterans, the heirs of two veterans, and finally a veteran's wife. Except for one case (line 167), no veteran owns more than 30 arouras of grain land. Within this span of 30 arouras, no clusters emerge; it is therefore not possible to distinguish a clear gap between rich and poor veterans. Although orchard land shows a tendency to be in the hands of veterans who own larger surfaces of grain land, it is also found among owners of smaller surfaces of grain land. On the whole, veterans own relatively little orchard land in the village. The same overall picture seems to emerge from nearby Karanis, where many veterans also lived.

d) Women

Among the landowners, women account for 52 entries. In some entries, a husband's name is given along with the woman's (lines 68, 75,

See also on above, footnotes 280, 289 and 289.

implicitly 87 & 88, 139 and 199), and in one case the wife's name is not given at all (line 55: given *Μέλιτος γυνή* [2]). One woman is registered as a man's daughter (line 97: *Θιόλης θυγάτηρ* [10:27:10]). Most of these women however seem to be the actual owners of the land. Women are spread at all levels along the curve of owners of grain land. Of the 9 individuals owning 50 arouras or more of grain land, 5 are women. The same pattern emerges from the study of orchard land, where women are to be found at all levels, but notably among the wealthy owners. Although they account for only 16% of the persons listed in the register, they hold 23% of grain land and 24% of orchard land (excluding the two last entries in the register, which are for so-called 'elohai categories').¹ The average holding for a woman is 19.7 arouras of grain land and 4.8 arouras of orchard land, against an overall average of 13.9 arouras of grain land and 2.9 arouras of orchard.

c) Grain land and orchard land

There are 197 individual owners listed. Of these, 123 own only grain land, 2 only orchard land, and the remaining 72 own both grain and orchard land. While owners of small surfaces of grain land are more numerous than wealthy owners, it is hard to set apart distinct groups of

¹ For related discussion see *Landholding and Agriculture in Late Roman Egypt* (1982) pp. 128-129. For figures given here (and, for comparison, for the 10th century AD, see *Κατάλογος των χωρικών της επαρχίας της Αιγύπτου*, village women own 17% of all land and 20% of the arouras, 8% of 100-1000 BAU holdings in Late Roman Egypt. For the latter see *W. J. 1982, 1987, 1992, 1993*, esp. pp. 128-130, 136-139, 140-141, 143-144, 146-147, 149-150, 152-153, 155-156, 158-159, 161-162, 164-165, 167-168, 170-171, 173-174, 176-177, 179-180, 182-183, 185-186, 188-189, 191-192, 194-195, 197-198, 200-201, 203-204, 206-207, 209-210, 212-213, 215-216, 218-219, 221-222, 224-225, 227-228, 230-231, 233-234, 236-237, 239-240, 242-243, 245-246, 248-249, 251-252, 254-255, 257-258, 260-261, 263-264, 266-267, 269-270, 272-273, 275-276, 278-279, 281-282, 284-285, 287-288, 290-291, 293-294, 296-297, 299-300, 302-303, 305-306, 308-309, 311-312, 314-315, 317-318, 320-321, 323-324, 326-327, 329-330, 332-333, 335-336, 338-339, 341-342, 344-345, 347-348, 350-351, 353-354, 356-357, 359-360, 362-363, 365-366, 368-369, 371-372, 374-375, 377-378, 380-381, 383-384, 386-387, 389-390, 392-393, 395-396, 398-399, 401-402, 404-405, 407-408, 410-411, 413-414, 416-417, 419-420, 422-423, 425-426, 428-429, 431-432, 434-435, 437-438, 440-441, 443-444, 446-447, 449-450, 452-453, 455-456, 458-459, 461-462, 464-465, 467-468, 470-471, 473-474, 476-477, 479-480, 482-483, 485-486, 488-489, 491-492, 494-495, 497-498, 500-501, 503-504, 506-507, 509-510, 512-513, 515-516, 518-519, 521-522, 524-525, 527-528, 530-531, 533-534, 536-537, 539-540, 542-543, 545-546, 548-549, 551-552, 554-555, 557-558, 560-561, 563-564, 566-567, 569-570, 572-573, 575-576, 578-579, 581-582, 584-585, 587-588, 590-591, 593-594, 596-597, 599-600, 602-603, 605-606, 608-609, 611-612, 614-615, 617-618, 620-621, 623-624, 626-627, 629-630, 632-633, 635-636, 638-639, 641-642, 644-645, 647-648, 650-651, 653-654, 656-657, 659-660, 662-663, 665-666, 668-669, 671-672, 674-675, 677-678, 680-681, 683-684, 686-687, 689-690, 692-693, 695-696, 698-699, 701-702, 704-705, 707-708, 710-711, 713-714, 716-717, 719-720, 722-723, 725-726, 728-729, 731-732, 734-735, 737-738, 740-741, 743-744, 746-747, 749-750, 752-753, 755-756, 758-759, 761-762, 764-765, 767-768, 770-771, 773-774, 776-777, 779-780, 782-783, 785-786, 788-789, 791-792, 794-795, 797-798, 800-801, 803-804, 806-807, 809-810, 812-813, 815-816, 818-819, 821-822, 824-825, 827-828, 830-831, 833-834, 836-837, 839-840, 842-843, 845-846, 848-849, 851-852, 854-855, 857-858, 860-861, 863-864, 866-867, 869-870, 872-873, 875-876, 878-879, 881-882, 884-885, 887-888, 890-891, 893-894, 896-897, 899-900, 902-903, 905-906, 908-909, 911-912, 914-915, 917-918, 920-921, 923-924, 926-927, 929-930, 932-933, 935-936, 938-939, 941-942, 944-945, 947-948, 950-951, 953-954, 956-957, 959-960, 962-963, 965-966, 968-969, 971-972, 974-975, 977-978, 980-981, 983-984, 986-987, 989-990, 992-993, 995-996, 998-999, 1000-1001, 1003-1004, 1006-1007, 1009-1010, 1012-1013, 1015-1016, 1018-1019, 1021-1022, 1024-1025, 1027-1028, 1030-1031, 1033-1034, 1036-1037, 1039-1040, 1042-1043, 1045-1046, 1048-1049, 1051-1052, 1054-1055, 1057-1058, 1060-1061, 1063-1064, 1066-1067, 1069-1070, 1072-1073, 1075-1076, 1078-1079, 1081-1082, 1084-1085, 1087-1088, 1090-1091, 1093-1094, 1096-1097, 1099-1100, 1102-1103, 1105-1106, 1108-1109, 1111-1112, 1114-1115, 1117-1118, 1120-1121, 1123-1124, 1126-1127, 1129-1130, 1132-1133, 1135-1136, 1138-1139, 1141-1142, 1144-1145, 1147-1148, 1150-1151, 1153-1154, 1156-1157, 1159-1160, 1162-1163, 1165-1166, 1168-1169, 1171-1172, 1174-1175, 1177-1178, 1180-1181, 1183-1184, 1186-1187, 1189-1190, 1192-1193, 1195-1196, 1198-1199, 1201-1202, 1204-1205, 1207-1208, 1210-1211, 1213-1214, 1216-1217, 1219-1220, 1222-1223, 1225-1226, 1228-1229, 1231-1232, 1234-1235, 1237-1238, 1240-1241, 1243-1244, 1246-1247, 1249-1250, 1252-1253, 1255-1256, 1258-1259, 1261-1262, 1264-1265, 1267-1268, 1270-1271, 1273-1274, 1276-1277, 1279-1280, 1282-1283, 1285-1286, 1288-1289, 1291-1292, 1294-1295, 1297-1298, 1299-1300, 1302-1303, 1305-1306, 1308-1309, 1311-1312, 1314-1315, 1317-1318, 1320-1321, 1323-1324, 1326-1327, 1329-1330, 1332-1333, 1335-1336, 1338-1339, 1341-1342, 1344-1345, 1347-1348, 1350-1351, 1353-1354, 1356-1357, 1359-1360, 1362-1363, 1365-1366, 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1640-1641, 1643-1644, 1646-1647, 1649-1650, 1652-1653, 1655-1656, 1658-1659, 1661-1662, 1664-1665, 1667-1668, 1670-1671, 1673-1674, 1676-1677, 1679-1680, 1682-1683, 1685-1686, 1688-1689, 1691-1692, 1694-1695, 1697-1698, 1699-1700, 1702-1703, 1705-1706, 1708-1709, 1711-1712, 1714-1715, 1717-1718, 1720-1721, 1723-1724, 1726-1727, 1729-1730, 1732-1733, 1735-1736, 1738-1739, 1741-1742, 1744-1745, 1747-1748, 1750-1751, 1753-1754, 1756-1757, 1759-1760, 1762-1763, 1765-1766, 1768-1769, 1771-1772, 1774-1775, 1777-1778, 1780-1781, 1783-1784, 1786-1787, 1789-1790, 1792-1793, 1795-1796, 1798-1799, 1801-1802, 1804-1805, 1807-1808, 1810-1811, 1813-1814, 1816-1817, 1819-1820, 1822-1823, 1825-1826, 1828-1829, 1831-1832, 1834-1835, 1837-1838, 1840-1841, 1843-1844, 1846-1847, 1849-1850, 1852-1853, 1855-1856, 1858-1859, 1861-1862, 1864-1865, 1867-1868, 1870-1871, 1873-1874, 1876-1877, 1879-1880, 1882-1883, 1885-1886, 1888-1889, 1891-1892, 1894-1895, 1897-1898, 1899-1900, 1902-1903, 1905-1906, 1908-1909, 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2183-2184, 2186-2187, 2189-2190, 2192-2193, 2195-2196, 2198-2199, 2201-2202, 2204-2205, 2207-2208, 2210-2211, 2213-2214, 2216-2217, 2219-2220, 2222-2223, 2225-2226, 2228-2229, 2231-2232, 2234-2235, 2237-2238, 2240-2241, 2243-2244, 2246-2247, 2249-2250, 2252-2253, 2255-2256, 2258-2259, 2261-2262, 2264-2265, 2267-2268, 2270-2271, 2273-2274, 2276-2277, 2279-2280, 2282-2283, 2285-2286, 2288-2289, 2291-2292, 2294-2295, 2297-2298, 2299-2300, 2302-2303, 2305-2306, 2308-2309, 2311-2312, 2314-2315, 2317-2318, 2320-2321, 2323-2324, 2326-2327, 2329-2330, 2332-2333, 2335-2336, 2338-2339, 2341-2342, 2344-2345, 2347-2348, 2350-2351, 2353-2354, 2356-2357, 2359-2360, 2362-2363, 2365-2366, 2368-2369, 2371-2372, 2374-2375, 2377-2378, 2380-2381, 2383-2384, 2386-2387, 2389-2390, 2392-2393, 2395-2396, 2398-2399, 2401-2402, 2404-2405, 2407-2408, 2410-2411, 2413-2414, 2416-2417, 2419-2420, 2422-2423, 2425-2426, 2428-2429, 2431-2432, 2434-2435, 2437-2438, 2440-2441, 2443-2444, 2446-2447, 2449-2450, 2452-2453, 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3270-3271, 3273-3274, 3276-3277, 3279-3280, 3282-3283, 3285-3286, 3288-3289, 3291-3292, 3294-3295, 3297-3298, 3299-3300, 3302-3303, 3305-3306, 3308-3309, 3311-3312, 3314-3315, 3317-3318, 3320-3321, 3323-3324, 3326-3327, 3329-3330, 3332-3333, 3335-3336, 3338-3339, 3341-3342, 3344-3345, 3347-3348, 3350-3351, 3353-3354, 3356-3357, 3359-3360, 3362-3363, 3365-3366, 3368-3369, 3371-3372, 3374-3375, 3377-3378, 3380-3381, 3383-3384, 3386-3387, 3389-3390, 3392-3393, 3395-3396, 3398-3399, 3401-3402, 3404-3405, 3407-3408, 3410-3411, 3413-3414, 3416-3417, 3419-3420, 3422-3423, 3425-3426, 3428-3429, 3431-3432, 3434-3435, 3437-3438, 3440-3441, 3443-3444, 3446-3447, 3449-3450

owners. Orchard land tends to be concentrated among owners of large surfaces of grain land, although there are some exceptions.

Ownership of orchard land is limited to 74 people out of 197. Most of them own a modest surface up to 12 *arouras*, while a few have between 12 and 20 *arouras*. Two small clusters of privileged owners are clearly marked, the first with individuals owning a surface of ca. 35 *arouras*, and the second slightly over 60 *arouras*.

f) Distribution of land (Alexandrians, metropolitans, and villagers)

The following charts summarize the data available for Philadelphia.

	grain land	orchard land
individual owners: 197	100	74
mean surface	1.42	8.22
modest surface	8.22	5.00
moderate surface	5.00	5.00
massive surface	66.77	66.77

Fig. 26 (grain) does not reflect the 2% increase in the number of 348 and 246, which have a related historical explanation. The 2% increase in the available area is included in the 1% increase in the number of 348. If the 2% increase is available, it is included, this means that the increase in the number of 348 is not significant. In fact, 2% of the area is not included in the number of 348, but a small amount, involving the same applies to the 2%.

Fig. 26 (orchard) is also not significant. The number of 348 is not significant, but the number of 348 is not significant. The number of 348 is not significant, but the number of 348 is not significant.

	entries	%	grain land	%	orchard land	%
Alexandrines	8	2.51	87.22	2.87	126.75	19.12
metropolitans	11	8.58	51.0	16.14	96.625	14.87
villagers	181	96.98	2106.11	71.69	530.16	29.70
epistolic categories	2	1.01	468.75	5.31	100.86	16.52
total	199	100	3083.08	100	664.39	100

Alexandrines and metropolitans own both grain land and orchard land in most cases (of out of 13 where data is available). Not surprisingly, these people also tend to own larger surfaces of land than villagers, although the gap is on the whole not very wide. Grain land is much more evenly distributed between the groups of Alexandrines, metropolitans and villagers than orchard land, as the chart above shows. Alexandrines in particular, who account for only 2.51% of the entries in the register, own 19.12% of all private orchard land. Several reasons could explain this striking imbalance: orchard land could hold more prestige (more absentee landlords), orchard land could require higher investment in the process of cultivation, but also yield higher income (and thus be more suited to the financial means of Alexandrines) and to their financial expectations in the long run; orchard land could be easier to manage through an agent. *P. 66 v. 1-2* illustrates how little time an absentee landlord (Gaius Valerius Celerus aka Philoxenos, see also 137-138) could devote to his estate: the sole purpose of his visit seems to be the collection of the income from his vineyard.

It is not yet quite clear when and how the large estates of the Byzantine period were built up, a process which appears to have produced a very high rate of inequality in land distribution. A good understanding of

the situation in the preceding centuries (especially the third) could improve an overall interpretation of the phenomenon. The publication of 137 is of interest in that it offers an almost complete survey of the distribution of a particular commodity (private grain and orchard land) in the village of Philadelphia at the beginning of the third century. It is possible to measure inequality of land distribution by means of the Lorenz curve and its single-number summation, the Gini index ($= R$): this method has already been applied to other places in Egypt, notably the Hermopolite nome in the fourth century A.D.¹ R is expressed as a figure between 0 and 1, the former meaning perfect equality in the distribution of a particular commodity (in this present instance, private land) and the latter meaning perfect inequality (in other words, one individual would own all the private land available).² Bowman (1981) provides a Gini index for 137 of $R = 0.37$, which was corrected by Bagnall (above, footnote 32) to 0.32 using all persons listed (or 516 families in total – not cases with complete data (these figures are for grain land belonging to villagers only)). This is a minimal correction, since the figure of 0.37 was fairly close to the index for residents of Antinoopolis and metropolitans in one of the low quarters of Hermopolis owning land throughout the entire Hermopolite nome around A.D. 350 (c. 815), and could have suggested no great change during the third

¹ See A. K. Bowman, 'Landholding in the Thebaid', *Journal of Egyptian Archaeology* 75 (1983), 117–63. Bagnall (above, footnote 32).

² See R. Dornier, *Les Structures Sociales de la Région de Oxyrhynchus* (Cambridge, 1980), 129, p. 30. — See also 'Comparative Landholdings in the Roman Empire', in M. R. Fildes (ed.), *Aspects of Roman Egypt* (Cambridge, 1976), 5–6, 30. Bagnall (above, footnote 32), 129, 130.

and early fourth centuries (see Bowman 188). In any case, comparison between different sets of data can be misleading when they do not pertain to the same level of wealth. In other words, metropolitans from Antiochopolis and the Hieropolite nome cannot be compared to villagers in Philadelphia, but only to the metropolitans in 137. — Also, as has been stressed by Baer (cf. above, footnote 32, 130), "it is a general fact about firm indexes that as one moves to larger orders of entities, the index rises."

Given the fact that grain land and orchard land do not hold the same value per aroura, it seems difficult simply to add them together and use this data for the calculation of a global measure of inequality. Therefore, since the data for grain land is relatively abundant in comparison with orchard land, one could take grain land only, or one could follow a more speculative path and attempt to weight orchard land by some factor and combine it with grain land. Even if a rough relative value of orchard land and grain land could be established, we still cannot assess the absolute value of a particular field. The distribution of landholding and the distribution of landed wealth are not necessarily identical.

In any case, if one turns to the second, more speculative method, assigning a relative weight for orchard land in comparison with grain land would be doing, if we had a precise idea of the price of these two categories of land in Philadelphia at the beginning of the third century. Unfortunately, although the available data comes mostly from the Arsinoite nome, it is

See Baer, *op. cit.*, footnote 38, column 3, and *ibidem*, *op. cit.*, column 3, column 4, column 5, column 6.

See Baer, *op. cit.*, column 3, column 4.

relatively scarce for the relevant period, and shows important variations.¹ For grain land between the second and third centuries, a rough estimate of 300 drachmas should not be widely off the mark (see Drexhage 150 ff.). As for orchard land, Drexhage (157) provides us with figures for olive land, fetching prices of 542 84 dr. (NBA I 9069, III A D = 680 dr. (Hof. II 379, A D = 671) and 896 dr. (Hof. II 666, A D = 177). It seems on the whole that orchard land was more expensive than grain land. The price of land however is not necessarily an adequate reflection of its value; orchard land may be more (or less) prestigious than grain land, but we have no way of measuring such prestige. The figure given in NBA I 9069 (542 84 dr.) looks aberrant for the third century, it is most unlikely that, on the whole, the price of olive land would have sunk to less than half of what it was in A D = 177. If we had more data available this extremely abnormal figure would probably be corrected by the bulk of the other data. In any case, we may not arbitrarily exclude this figure simply because it does not suit our general impression. Therefore a rough price estimate for A D = 216 could be something around 600 dr. – or i.e. twice the price of grain land. On this basis it is suggested, with due caution, that we double the weight of orchard land in the calculation of an overall Com index for grain and orchard land combined. The resulting figure (89%) does vary from the figure found using the more conventional method (542 for grain land

¹ See H. J. Drexhage, *Preis- und Mengen-Untersuchungen zur lateinischen römischen Landwirtschaft* (Leipzig, 1962), pp. 111–12, 127–128.

remembered, however, that the Philadelphia data is quite scarce for Alexandrians and metropolitans (13 cases where data is sufficiently well preserved to be used) and could easily be distorted by individual factors.² Also, as has been stated above, *R* rises as one moves to larger orders of entities. We would therefore expect the index for the whole Arsinoite nome, if available and under similar circumstances, to be higher than the figure found for the sole villages of Philadelphia or Karamis. This explains in part why, for the Hermopolite nome (ca. AD 350), *R* stands at 815. This later figure can be misleading, since—as was pointed out by Ragnall following Bowman, “the figures show the distribution of landholdings in a population of city residents, many of whom may not have depended on those landholdings for their primary source of income or wealth.” In the case of our register, the metropolitans listed in the first column could well have owned more private land in other villages of the Arsinoite, or, for the Alexandrians, even outside the nome. Therefore our Alexandrians and metropolitans did not necessarily depend on their possessions in Philadelphia as their only source of income.

² For similar caution, see Ragnall (above), *Arsinoite*, 12–13.

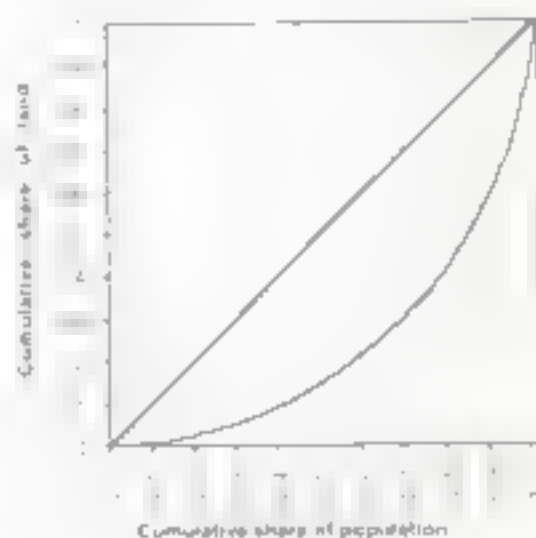
Villagers

source	location	date	R
Brown 199	Kenya (colony)	1955 B.C.	.674
137	Philippines (private land)	A.D. 1967	.532
137	Philippines (subdivided land)	A.D. 1967	.528
Hayatt 111	Kenya (colony)	A.D. 1960	.411
Bernal 130	Kenya (private land)	A.D. 1960	.478

Philadelphia

Lorenz curve
for distribution
of private grain
land (villagers)

$$R = .531$$



Hayatt's charts (111, fig. 1 and 135, fig. 5) illustrate the relation between the Gini index, which is a single figure, and the Lorenz curve. Although the same R can correspond to different shapes of curves, the area between the diagonal (perfect equality in distribution) and the curve will be the same for a given R . This area increases with R ; a curve very close to the diagonal means a fairly even rate of distribution, whereas a very deep curve points to uneven distribution of the item under consideration.

The figures for Kerkeosiris and Karanis, although more than four centuries apart, do not differ much when one considers private and public land together. On the other hand, R rises when restricted to private land, as can be seen from the case of Karanis and Philadelphia (grain land).¹⁷ Still, the latter village shows the highest rate of inequality in the available data. For villagers owning orchard land in Philadelphia, R (528) is almost the same as for grain land (532). It should be noted, however, that the index for orchard land rises sharply (from 528 to 840) if one takes into account zero cases, i.e. villagers listed in the register who do not own any orchard land.¹⁸ The same remark applies to the whole register, which does not take into account landless inhabitants in Philadelphia.

As was already noted by Oates (*Proc. VIIIth Int. Congr. Pap.* 387), no one group dominates the private land of Philadelphia. The Alexandrians and metropolitans listed in the first two categories have larger holdings than the resident population, but this cannot be considered a dominant position. This register takes into account only owners of private land. This means that the farmers who leased land either from private owners or from the state are not included in this survey. State land leased to farmers will probably increase the holdings of absentee owners less than those of residents, the impression that the Alexandrians and metropolitans are not

¹⁷ See Hagenell, *above*, footnote 12, p. 146.

¹⁸ The same phenomenon was mentioned by Hagenell, *above*, footnote 12, p. 150 for mid nineteenth century Wisconsin, where the Gini index rises from 2680 to 4600 when zero cases are taken into account.

dominant would thus presumably be strengthened if one had public land in the figures.¹⁰

Coming back to the debate on the constitution of large estates in the Byzantine period, the evidence collected from the village of Philadelphia at the beginning of the third century shows a pattern where inequality does exist, but at a rate that is more or less comparable with what we find in Kerkeosiris at the end of the second century B.C., or in Karamis at the beginning of the fourth century A.D. No single individual can be shown to be in possession of a disproportionate amount of land. Among the wealthiest landowners, no clear family links have been established which would, by forming a cluster, enable us to identify a large estate. Concentration of private landed wealth would have occurred, if at all, in a later period.

¹⁰ On the impact of absentee landlords on the villages, see M. Shatto, 'The Village of Philadelphia in the Ptolemaic Period', *Ann. Real. Acad. Hist. Nat. Madrid* 172 (182), also: I. Rowlandson, 'Agricultural Economy and Village Society in Roman Egypt', *ibid.* 158 (exp.), 145-147.

- 38 $\sigma\iota\tau \ \alpha\beta\alpha \ \epsilon'$
 39 Ἀρμενε[α₂] Ἡγεκλειόων
 $\sigma\iota\tau \ \alpha\beta\alpha \ \gamma$
 40 Ἀσήμε[β] Ἰερήλοφ
 $\sigma\iota\tau \ \alpha\beta\alpha \ \delta'$
 41 Ἀσήμε[β] Ἡόντο Πόσσα
 $\sigma\iota\tau \ \alpha\beta\alpha \ \epsilon'$
 42 Ἀντωνιολήρησθηήτων
 $\sigma\iota\tau \ \alpha\beta\alpha \ \mu\alpha\delta$ $\delta\iota\alpha\delta \ \alpha\beta\alpha \ \omega$
 43 Ἀρτεμις Σαρπησσος
 $\sigma\iota\tau \ \alpha\beta\alpha \ \gamma$ $\delta\iota\alpha\delta \ \alpha\beta\alpha \ \lambda\alpha$
 44 Ἀκουσινος πατρως
 $\sigma\iota\tau \ \alpha\beta\alpha \ \epsilon'$
 45 Ἀρμενιανος πατρως
 $\sigma\iota\tau \ \alpha\beta\alpha \ \mu$ $\delta\iota\alpha\delta \ \alpha\beta\alpha \ \mu$
 46 Ἀρχιεπισκοπὸς Ἰεροσολύμοι
 $\sigma\iota\tau \ \alpha\beta\alpha \ \chi'$
 47 Ἀπολλωνιος Κολλαστος
 $\sigma\iota\tau \ \alpha\beta\alpha \ \beta$
 48 Ἀλεξάνδρος στρατηγος
 $\delta\iota\alpha\delta \ \alpha\beta\alpha \ \alpha$
 49 Ἀδελφὸς Ἀδελφὸς Ἰωάννης
 $\sigma\iota\tau \ \alpha\beta\alpha \ \delta$ $\delta\iota\alpha\delta \ \alpha\beta\alpha \ \beta$
 50 Ἀποστολὸς Ἰωάννης καὶ Νικηταὶς Ἀνδρέας
 $\delta\iota\alpha\delta \ \alpha\beta\alpha \ \gamma$
 51 Ἀντ[] Ἰωάννης

σιτ. ἰᾶρ. ε | δ η'

52 Ἀρριανός οὐκ ἐστὶν ἀνός·

σιτ. ἰᾶρ. β

53 Γερμανός υἱός | ἐμὲ λῆμνος

σιτ. ἰᾶρ. γ δ'

54 Ἐμὲ λῆμνος οὐκ ἐστὶν ἀνός·

σιτ. ἰᾶρ. ε δ'

55 γὰρ ἡ Μέλανος ἀπὸ τοῦ |

σιτ. ἰᾶρ. ε

56 Γάμος·

| σ | ε | τ | ἰᾶρ. κ γ δ'

δενδ. ἰᾶρ. ε δ'

57 Ἐμὲ λῆμ | ο | ν οὐκ ἐστὶν ἀνός·

3 α | ε | ἰᾶρ. δ

58 Αἰδοῦμαι | Φιννομόχους |

σιτ. ἰᾶρ. β δ'

59 Αἰδοῦμαι | ο | κ ἐστὶν ἀνός·

δενδ. ἰᾶρ. ε δ'

60 Αἰδοῦμαι Φιννομόχους | αὐτὸς ἐστὶν·

σιτ. ἰᾶρ. ε δ'

61 | | | | | τοῦ | | | | |

δενδ. ἰᾶρ. γ ε δ'

62 | | | | |

σιτ. ἰᾶρ. ε η

63 | | | | |

σιτ. ἰᾶρ. ε δ'

δενδ. ἰᾶρ. ε

64 | | | | |

	αὐτ. ᾠρ. λ.	δενδ. ᾠρ. α
65	
	αὐτ. ᾠρ. ς	

46 ἀραβικοζήτη· 47 Κολλισίων· 48 ἐν· 49 ἄσπετος γαρ

Σύδ. III

66 Αὐγείνης αὐτ. ἄσπετος· Ψύας

αὐτ. ᾠρ. κδ	δενδ. ᾠρ. α
-------------	-------------

67 Αἰθέρης αὐτ. ἄσπετος·

αὐτ. ᾠρ. ζ	δενδ. ᾠρ. ιδ
------------	--------------

68 Πηγεκλίσια γὰρ ἡ Αἰθέρης

αὐτ. ᾠρ. ι	
------------	--

69 Αἰθέρης Γερμανίας

αὐτ. ᾠρ. ι	
------------	--

70 Αὐγείνης Γερμανίας

αὐτ. ᾠρ. κσθ	δενδ. ᾠρ. β
--------------	-------------

71 Αἰθέρης Ιαπωνίας

αὐτ. ᾠρ. ζ	δενδ. ᾠρ. β
------------	-------------

72 Αὐγείνης Αὐστρίας· Κολλισίων

αὐτ. ᾠρ. αθ	δενδ. ᾠρ. β
-------------	-------------

73 Αὐγείνης Αὐστρίας· Περσίδος γαίης

αὐτ. ᾠρ. ιβ	
-------------	--

74 Αὐτὸς Σερβοπορβανός

σιτ. αἶρ. γ

75 Αἰμορροῖς γὰρ Πισινίκω

σιτ. αἶρ. γ δ

76 Αἰορῶς Τερεν ἐν Τάνει

σιτ. αἶρ. κ ε

77 Αἰορῶς οὐκ ἐστὶν ἐν τῷ Πέρει

σιτ. αἶρ. γ

78 Εἰρηνοῦς Αἰορῶς

σιτ. αἶρ. β

79 Εὐδοκίμων ἄρτος περὶ Πισιδωνίω

σιτ. αἶρ. κ β

80 Εὐάνιος οὐκ ἐστὶν ἐν τῷ Νιστῷ

σιτ. αἶρ. β

81 Εὐάνιος ἐν τῷ Νιστῷ

σιτ. αἶρ. κ δ

82 Εὐάνιος οὐκ ἐστὶν

σιτ. αἶρ. κ

διδ. αἶρ. η

83 Εὐάνιος Σιστοῦ

σιτ. αἶρ. γ

84 Εὐκλείδης Νιστησίω

σιτ. αἶρ. γ δ

85 Εὐκλείδης καὶ Σιστοῦ

σιτ. αἶρ. η

86 Εὐκλείδης οὐκ ἐστὶν

[σιτ. αἶρ. γ δ]

87 | Εὐκλείδης γὰρ

σι|ε| ὄρ·ε|

88 Ἡρεκλεῖτε γονὴ ἐν τοῖ Νέστοι

σι|ε| ὄρ·ε|

89 Ἡρεκλεῖτόν· ἱππύον

σιτ· ὄρ· ἡ|δ|

90 Ἡρεκ· Κοῦρην

σιτ· ὄρ· ε|

91 Ἡρεον Βασχυστήν

σιτ· ὄρ· θ|

δενό· ὄρ· δ|

92 Ἡ|ρ|ός μοι πρῶ· Ἡρείδης

σιτ· ὄρ· ἰδ|

93 Ἡ|ρ|οκλειτμον Θε· σελέρην

σιτ· ὄρ· ἡ|δ|

94 Ἡρ|ο|κλή· Ἡρ|ο|νός

σιτ· ὄρ· ε|

95 Θεεργή· Ἡρεκαστασός

σιτ· ὄρ· β· η|

96 Θεεργωδής Νηυστα

σιτ· ὄρ· δ|

97 Ἡ|ρ|οκλή· Ἡρεκαστασός ἐν τοῖ Νέστοι

σιτ· ὄρ· ε|

98 Ἡ|ρ|οκλή· Ἡρεκαστασός ἐν Νηυστασίδι

σιτ· ὄρ· ε|

99 Ἡ|ρ|οκλή· Ἡρεκαστασός

σιτ· ὄρ· ἡ|δ|

100 Ἡ|ρ|οκλή· Ἡρεκαστασός ἐν Νηυστασίδι

σιτ. ᾠρ. ιδ δι ενδ. | ᾠρ. ι

101 Τωλίδε Τερσίδη

σιτ. ιᾠρ. ι νη δι ενδ. ᾠρ. ι

74 Δος | 85 Σινώριος | 91 εν. | 92 ηρωδ. | ρογ

Γεν IV

102 Τωλίδε μήτηρ Βουθλατος

σιτ. ᾠρ. ιβ

103 Ίσοχος δουλ. ος. Δημήτριον γρ. μενσιν. στήθεστος

σιτ. ᾠρ. ια

104 Τωλίδε Σινώριος

σιτ. ᾠρ. ια

105 Τωλίδε Κοσμήτος

σιτ. ᾠρ. ια δι ενδ. ᾠρ. ια

106 Τρριανός. δι. καδύριος. ος.

δι ενδ. ᾠρ. ια

107 κληρονομία. Ερυσθίου. Απομόνιος

σιτ. ᾠρ. ιδ δι ενδ. ᾠρ. ιδ

108 Κοττινός. Τωλίδε

σιτ. ᾠρ. ιβ δι ενδ. ᾠρ. ιβ. ζα

109 κληρονομία. Αρτίτος. ον. τρ. ανων.

σιτ. ᾠρ. ιζ

110 κληρονομία· Διαθήκη· ἀνά τῃς ἀνά· ἐν τῇ Διαθήκῃ

αὐτ· ἀρ· α'

111

ἀνά· ἀρ· δ'

112 Κόστος· Τούλω

αὐτ· ἀρ· α'

ἀνά· ἀρ· γ'

113 κληρονομία· Βούλησι· Διαθήκη· ἀνά

αὐτ· ἀρ· α'

ἀνά· ἀρ· θ'

114 Κρήνη· Πρωτότος

αὐτ· ἀρ· γ'

115 Κόστις· Κόστι· Δόστις

αὐτ· ἀρ· γ'

ἀνά· ἀρ· δ'

116 Κοπή· ἀπὸ· ἀπὸ· ἀπὸ

αὐτ· ἀρ· α'

117 Κοπή· Πρωτότος

αὐτ· ἀρ· β'

118 Κοπή· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ

αὐτ· ἀρ· β'

119 Κόπος· Πρωτότος

αὐτ· ἀρ· β'

120 [κ]· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ

αὐτ· ἀρ· α'

121 [κ]· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ

αὐτ· ἀρ· α'

ἀνά· ἀρ· γ'

122 Κοπή· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ

αὐτ· ἀρ· β'

123 Κοπή· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ· ἀπὸ

σιτ. ἄρ. α!

124 Κυζλοῦθ[α] Ασκλητίας

σιτ. ἄρ. δ!

125 Κυπριολόγος Βενέφικητος

δινδ. ἄρ. λ

126 Λόγος οὐρανίου

σιτ. ἄρ. θ η!

127 Λοκρητὶς Λοκρητίου

σιτ. ἄρ. ο

δινδ. ἄρ. λδ

128 Λουκιδὸς οὐρανίου

σιτ. ἄρ. β

129 Λογγὸς Σιροππίου

σιτ. ἄρ. ςη

δινδ. ἄρ. ςβη

130 Λοκρητὶς Λοκρητίου

σιτ. ἄρ. ας

131 Λοκρητὶς[α] Λοκρητίου

σιτ. ἄρ. ηδ

132 Μηρούς Κλημενίου

σιτ. ἄρ. αγ

δινδ. ἄρ. ςθ ε

133 Μίλλος ἱετρός καὶ Σπύρος ἀπαλ. οὐρανίου

σιτ. ἄρ. ςη

134 Μυσθί[α] Ὀδυσσεύος τοῦ Σπυρίωνος

σιτ. ἄρ. ι!

135 Μοξί[α] Ὀδυσσεύος τοῦ Σπυρίωνος

σιτ. ἄρ. κ

δινδ. ἄρ.

136 Μυσθί[α] τοῦ Σπυρίωνος

στις ἑρ. 1

137 Μορκενοῦς Κασσιόδατος

στις ἑρ. 3/5

107 Γραμμάριος 108 Γραμματεὺς 123 Κασσιόδατος 127 Αἰσχυρίδης Αἰσχυρίδης

132 Μορκενοῦς 134 Κασσιόδατος 135 Διδάσκαλος 136 Κασσιόδατος

Col. V

138 Νομισματιῶν ἑρμῶν

στις ἑρ. 1

139 Μορκενοῦς Ἰσχυρίδης Νομισματιῶν ἑρμῶν

στις ἑρ. 3/5

δενδ. ἑρ. 3/5

140 Μισθῶν ἑρμῶν

στις ἑρ. 2

141 Μισθῶν Ζεύδατος

στις ἑρ. 4

142 Μορκενοῦς δούδατος

στις ἑρ. 6/8

143 Νεῦδατος Μισθῶν

στις ἑρ. 7/8

144 Νομισματιῶν ἑρμῶν

στις ἑρ. 6

δενδ. ἑρ. 7/8

145 Νομισματιῶν Νομισματιῶν Παιδῶν

146 ἑρμῶν

	σιν. ᾠρ. λβ	δινθ. ᾠρ. ρ
147 Νομισσινος χρυσόχρους		
	σιν. ᾠρ. π	δινθ. ᾠρ. η'
148 Νομισσινος Σαβηνιανός		
	σιν. ᾠρ. ιγ δ	δινθ. ᾠρ.
149 Νομισσινος Σαβηνος		
	σιν. ᾠρ. ι	δινθ. ᾠρ. θ
150 Νομισσινος Σαβηνος		
	σιν. ᾠρ. ια δ'	δινθ. ᾠρ. ια
151 Νομισσινος Σαβηνος		
	σιν. ᾠρ. ιζ	
152 Νομισσινος Σαβηνος		
	σιν. ᾠρ. ιζ	
153 Νομισσινος Σαβηνος		
	σιν. ᾠρ. ιζ	
154 Νομισσινος Σαβηνος		
	σιν. ᾠρ. ια	
155 Νομισσινος Σαβηνος		
	σιν. ᾠρ. ια	
156 Νομισσινος Σαβηνος		
	σιν. ᾠρ. ιζ	
157 Νομισσινος Σαβηνος		
	σιν. ᾠρ. ιζ δ'	
158 Νομισσινος Σαβηνος		
	σιν. ᾠρ. ιζ	δινθ. ᾠρ. ι δ'
159 Νομισσινος Σαβηνος		

- σιτ. ᾠρ. κγδ' δειδ. ᾠρ. β
 160 Οὐκράτος | []
 σιτ. ᾠρ. λγ' (δγ' ᾠρ. λγ) δειδ. ᾠρ. γδ'
 161 Οὐκράτος Μισ(θ)ός
 σιτ. ᾠρ. γ
 162 Οὐκράτος Ζαγρῶτος
 σιτ. ᾠρ. θ'
 163 Οὐκράτος Ὀκράτος γ α λ
 σιτ. ᾠρ. θδ' α'
 δειδ. ᾠρ. β
 164 Οὐκράτος Ἡρακλῆανον
 σιτ. ᾠρ. κ
 δειδ. ᾠρ. γδ'
 165 Παιδῆτος Ζαγρῶτος
 σιτ. ᾠρ. λδ'
 166 Παιδῆτος Σιστῆτος
 σιτ. ᾠρ. ιγδ' δειδ. ᾠρ. β
 167 Παιδῆτος Ὀκράτος
 σιτ. ᾠρ. ιβ'
 δειδ. ᾠρ. γ
 168 Παιδῆτος Ἰππῆτος
 σιτ. ᾠρ. κ
 δειδ. ᾠρ. ιβ
 169 Παιδῆτος Παιδῆτος
 σιτ. ᾠρ. α
 170 Παιδῆτος Ἀγρῆτος
 σιτ. ᾠρ. ιδ'
 171 Παιδῆτος Ἰππῆτος
 σιτ. ᾠρ. α
 172 Παιδῆτος Ἀγρῆτος

- σιντ. $\alpha\beta\gamma$ - $\alpha\beta$
- 183 Πιστις Πιστοζήμιος
σιντ. $\alpha\beta$
- 184 Πιστιον Πισήπιος
σιντ. $\alpha\beta$ - α
- 185 Σαρραπίμιον Ιστριος
σιντ. $\alpha\beta$ - α
- 186 Σαββινογιό, σαββινογιό [v] το Νιστο
σιντ. $\alpha\beta$ - $\alpha\beta$
- 187
δινδ. $\alpha\beta$ - β
- 188 Σορίων Σοριφίλο
σιντ. $\alpha\beta$ - $\alpha\delta$
- δινδ. $\alpha\beta$ - $\alpha\beta$ - η - ω
- 189 Σιμπρόνιος Σιπραβόσιος
σιντ. $\alpha\beta$ - $\alpha\alpha$
- δινδ. $\alpha\beta$ - $\alpha\beta$ - η - ω
- 190 Σιρίκος Θεσπριος
σιντ. $\alpha\beta$ - α
- 191 Σοριπτιον Πισι(ι)
σιντ. $\alpha\beta$ - α
- 192 Σοριπτιον Θοριπτιον
σιντ. $\alpha\beta$ - $\alpha\alpha$
- δινδ. $\alpha\beta$ - $\alpha\beta$ - α
- 193 Σοριπτιμιον Θοριπτιμιον
σιντ. $\alpha\beta$ - $\alpha\alpha$
- 194 Σορήκος Ζουζον
σιντ. $\alpha\beta$ - $\alpha\alpha$ - α - α
- 195 Σοριφίλος Άουαδον
σιντ. $\alpha\beta$ - α - α

196 Στρατιών [τ] [τ] ἐν τῷ Σ[τ] [τ] [τ]
στ[τ] [τ] ὄρ

197 Στρατιός [τ] [τ] [τ]
στ[τ] ὄρ. [τ] [τ]

198 Στρατός Ἡρό
στ[τ] ὄρ. [τ]

199 Στρατός γυνή Ἀρτεμιόφρου
στ[τ] ὄρ. [τ]

200 Στρατιών Ἀρτεμιόφρου
στ[τ] ὄρ. [τ] Δεσφ. στ[τ]

201 Στρατιόφρου Ἀρτεμιόφρου
στ[τ] ὄρ. [τ] Δεσφ. στ[τ]

202 Στρατός Ἀρτεμιόφρου
στ[τ] ὄρ. [τ]

203 Στρατός Ἡρόφρου
στ[τ] ὄρ. [τ] Δεσφ. ὄρ. [τ]

204 Στρατός Ἡρόφρου
στ[τ] ὄρ. [τ] Δεσφ. ὄρ. [τ]

205 Στρατός Ἀρτεμιόφρου
στ[τ] ὄρ. [τ]

206 Στρατός Ἀρτεμιόφρου
στ[τ] ὄρ. [τ]

207 Στρατός Ἀρτεμιόφρου
στ[τ] ὄρ. [τ]

208 Στρατός Ἀρτεμιόφρου
στ[τ] ὄρ. [τ]

- 220 Έτος: κα Μάρκος Αντώνιος Σουλός
- 221 Άλφονσος Παρθικός βασιλεύς
- 222 Βρυτανικός βασιλεύς: Ερμάνου
- 223 με γένος: Γάβριελ Σουλός
- 224 Αντώνιος: Παρθικός βασιλεύς: ο Σουλός

TRANSLATION

4111

1.7

From Amelius Paston, village scribe of Philadelphia, prepared list of persons, of payments in cash and in kind prepared to be sent to Syria to the excellent armies of our master the Emperor Severus Antoninus Felix Pius Augustus. [Inv.]

- | | | |
|----|---|----------------------------|
| 8 | Private land—grain land, 38.26 (fraction) bushel/acre, orchard land, 76.2 (1/2) bushel/acre | |
| 9 | Alexandros—magistrate | |
| 10 | Anselmus—Apion, and however he is styled | |
| | grain land 30 car. | orchard land 60 car. |
| 11 | Anselmus—Hermias, a.k.a. Apollonius | |
| | gr. l. 11.8 car. | orch. l. 16 (1/2) 2.8 car. |
| 12 | Flavius Prodelmanus, a.k.a. Dexiphan | |
| | gr. l. 12 (1/2) car. | |
| 13 | Gaius Valerius Celerus, a.k.a. Philoxenos | |
| | gr. l. 16 car. | orch. l. 9 car. |
| 14 | Gennellus—retired centurion | |
| | gr. l. 1 + 17 (1/2) 1.6 + 32 car. | |
| | | orch. l. 11 car. |

Col. II

- 30 Apollonius, son of Canus
gr. 1 3 car. 1
- 31 Ammonius, son of Ammonius
gr. 1 14 car. 1 orch. 1 5 car. 1
- 32 Asklepios, son of A
gr. 1 12 1 car. 1 orch. 1 2 car. 1
- 33 Ammonius, son of Ammonius
gr. 1 5 car. 1
- 34 Apollonius, son of Germanus
gr. 1 8 car. 1 orch. 1 1 car. 1
- 35 Ammonius, son of S
gr. 1 10 1 3 car. 1
- 36 Artemidoros, son of Artemidoros
gr. 1 18 car. 1
- 37 Apolloas, son of Anon
gr. 1 24 car. 1 orch. 1 2 car. 1
- 38 A in Nestor
gr. 1 8 1 2 car. 1
- 39 Ammonius, son of Herakleides
gr. 1 1 car. 1
- 40 Aemius, son of B. Iapys
gr. 1 18 1 2 car. 1
- 41 Aemius, son of Pasis, son of Psesta
gr. 1 6 1 2 car. 1
- 42 Antonia Thermionthion

- | | | |
|---|------------------------|----------------------|
| | gr. 1, 43 1/4 (ar.) | orch. 1, 14 (ar.) |
| 43 Artemis, daughter of Sarapion | | |
| | gr. 1, 3 (ar.) | orch. 1, 30 (ar.) |
| 44 Acontianus, physician | | |
| | gr. 1, 6 (ar.) | |
| 45 Ammonianus, veteran | | |
| | gr. 1, 1 (ar.) | orch. 1, 1 (ar.) |
| 46 Anchoumphis, Arab archer | | |
| | gr. 1, 20 1/2 (ar.) | |
| 47 Apollonios, son of Kallisto | | |
| | gr. 1, 2 (ar.) | |
| 48 Alexandros, soldier | | orch. 1, 1 (ar.) |
| 49 The sister of Valerius, cavalryman | | |
| | gr. 1, 4 1/2 (ar.) | orch. 1, 2 (ar.) |
| 50 Apollitarius, son of Amos, and his brother Nominatus | | |
| | | orch. 1, 6 (ar.) |
| 51 Annus | gr. 1, 5 3/4 1/8 (ar.) | |
| 52 Arrianus, veteran | | |
| | gr. 1, 2 (ar.) | |
| 53 Germanus, son of Gemellon | | |
| | gr. 1, 3 1/2 (ar.) | |
| 54 Gemellus, veteran | | |
| | gr. 1, 24 (ar.) | |
| 55 The wife of Metax, cavalryman | | |
| | gr. 1, 5 (ar.) | |
| 56 Gaius | | |
| | [gr. 1] 23 1/2 (ar.) | orch. 1, 3 1/2 (ar.) |

57 Gemellion, veteran

gr 1 4 car 3

58 Diodoros, son of Psenanous

gr 1 2 1/4 car 3

59 Didymos, cavalryman

orch 1 5 3/4 car 3

60 Diodora, daughter of Psenanous, sister of 58

gr 1 10 1/4 car 1

61 | | | | | | | | | |

orch 1 3 1/2 1/8 car 3

62 | | | | | | | | | |

gr 1 5 1/8 car 1

63 | | | | | | | | | |

gr 1 1/2 1/2 car 1

orch 1 5 car 1

64 | | | | | | | | | |

gr 1 1 3/4 car 1

orch 1 1 car 1

65 | | | | | | | | | |

gr 1 10 1/2 car 3

Col III

66 Diogenes, veteran, son of 15 Psos

gr 1 2 1/4 car 3

orch 1 1 car 3

67 Didymos, soldier

gr 1 3 car 3

orch 1 3 1/4 car 1

68 Herakleides, 15 wife, daughter of 15 Mysther

gr 1 5 1/2 car 3

69 Diodoros, son of 15 Herakleides

gr 1 5 car 3

70 Diogenes, son of Gemellos

gr 1 2 1/2 3/4 car 1

orch 1 2 car 1

- 71 Didymos, son of Ision
gr 1 17 car 1 orch 1 2 car 1
- 72 Diogenes, son of Antonius Kalabel
gr 1 14 1/2 car 1 orch 1 2 car 1
- 73 Diogenes, son of Lucetius, "of the walking area"
gr 1 12 1/2 car 1
- 74 Dios, son of Sarapammon
gr 1 3 car 1
- 75 Demarous, wife of Pasmukos
gr 1 10 1/4 car 1
- 76 Diogenes, son of Chelitan in Tapis
gr 1 25 1/2 car 1
- 77 Diogenes, veteran, in the place "beyond"
gr 1 3 car 1
- 78 Herminus, son of Xenemus
gr 1 2 car 1
- 79 Eudamion, agent of Posidomonos
gr 1 22 car 1
- 80 Heremius, veteran, in Nestou
gr 1 2 1/2 car 1
- 81 Herminus, in Nestou
gr 1 24 car 1
- 82 Heremius, veteran
gr 1 20 car 1 orch 1 1 car 1
- 83 Heriens, son of Sazos
gr 1 3 1/2 car 1
- 84 Herakleides, son of Nestesios

- gr. I. 5 I 4 (a) 1
- 85 Heraios, a.k.a. Neveia
gr. I. 11 (a) 3
- 86 Heraklas, veteran
gr. I. 13 I 2 (a) 3
- 87 Herandous, chos wife
gr. I. 10 I 1 (a)
- 88 Heraklena, chos wife in Nestou
gr. I. 11 (a) 3
- 89 Heraklenes, cavalryman
gr. I. 8 I 1 (a) 1
- 90 Heras, daughter of Komos
gr. I. 10 (a) 1
- 91 Heron, from Bakhias
gr. I. 9 (a) 1 arch. I. 1 (a) 1
- 92 Heras, whose mother is Heras
gr. I. 13 (a)
- 93 Heraklamos, son of A. Heros
gr. I. 11 I 1 (a) 1
- 94 Herakles, son of Heron
gr. I. 4 (a) 1
- 95 Phatres, daughter of Chsenomphos
gr. I. 2 I 2 I 2 (a) 1
- 96 Theromphos, daughter of Xomphas
gr. I. 4 I 1 (a)
- 97 The daughter of Yermos, in Nestou
gr. I. 3 I 2 (a) 1

- 98 [Jul]ianus, Paouales r^{no}, in Karanis
gr. 1.51.1 [tar]
- 99 [Is]idoros, son of Atenos
gr. 1.83.4 cat. 1
- 100 [Ju]lianus, veteran
gr. 1.14 cat. 1 orch. 1.1.1 cat. 1
- 101 Julia Tertina
gr. 1.88 cat. 1 orch. 1.1.1 cat. 1
- Col IV
- 102 Julia, mother of Boothlos
gr. 1.2 cat. 1
- 103 Isachos, slave of Demetrios, ex gymnasium
gr. 1.20.1.2 cat. 1
- 104 Julius Severus
gr. 1.8 cat. 1
- 105 Julia Kopronis
gr. 1.80 cat. 1 orch. 1.3.1.2 cat. 1
- 106 Irianos, decurion
orch. 1.8.1.2 cat. 1
- 107 The heirs of Igvannos-Diosgenes
gr. 1.36 cat. 1 orch. 1.1.1.2 cat. 1
- 108 Kofkaras, son of Justos
gr. 1.12 cat. 1 orch. 1.2.1.2.1.2
- 109 The heirs of Antos, veteran
gr. 1.7 cat. 1

- 110 The heirs of Diogenes, veteran, in Neston
gr 1 3 1/2 car 1
- 111 orch 1 4 1/2 car 1
- 112 Castor, son of Julius
gr 1 14 car 1 orch 1 6 car 1
- 113 The heirs of Rotus, son of Sarapion
gr 1 45 3/4 car 1 orch 1 9 car 1
- 114 Krekos, son of Herodas
gr 1 3 car 1
- 115 Kasto, son of Kasyllas
gr 1 6 car 1 orch 1 1 1/2 car 1
- 116 Kopres, freedman
gr 1 3 1/2 car 1
- 117 Kopres, son of Petionios
gr 1 2 car 1
- 118 Kyrtillios, son of Nektos, in Neston
gr 1 2 car 1
- 119 Kronion, son of Euphates
gr 1 2 car 1
- 120 Kyrtika, sister of Sarapodinos
gr 1 5 car 1
- 121 The heirs of Pensemas, son of Iulianus
gr 1 1 1/2 car 1 orch 1 3 car 1
- 122 Kopres, whose mother is Ilas
gr 1 2 car 1
- 123 Kopres, son of Apynchos
gr 1 1 1/2 car 1

- 124 Kollouthos, son of Asklas
gr. 1. 4 1/2 car.)
- 125 Capitolinus, beneficiarius arch. 1. 30 car.)
- 126 Longus, veteran
gr. 1. 4 1/8 car.)
- 127 Lucretius, son of Lucretius
gr. 1. 9 1/2 car.) arch. 1. 34 car.)
- 128 Leonides, veteran
gr. 1. 2 car.)
- 129 Longinus, son of Sarapion
gr. 1. 12 1/2 car.) arch. 1. 12 1/8 car.)
- 130 Lucretia, daughter of Lucretius
gr. 1. 16 1/2 car.)
- 131 Lucetianus, son of Antonius
gr. 1. 8 1/4 car.)
- 132 Mevia Clementina
gr. 1. 7 3/4 car.) arch. 1. 14 1/2 car.)
- 133 Melas, physician, and Sporos, freedman
gr. 1. 18 car.)
- 134 Mysthes, son of Orsenouphis, tessetarius
gr. 1. 1. 10 car.)
- 135 Maximus, secretary of the financial administration of public land
gr. 1. 25 car.) arch. 1. 10 1/2 car.)
- 136 Mystharon, son of Capito
gr. 1. 5 car.)
- 137 Marcianus, son of Kasyllus
gr. 1. 12 car.)

Col. V

138. Nemesas, veteran

gr. 1.10 (ar.)

139. Mousa, wife of Diogenes, veteran

gr. 1.4 (ar.)

orch. 1.2 (ar.)

140. Mysthes, manufacturer of oil

gr. 1.7 [1.3] (ar.)

141. Menems, son of Zoidos

gr. 1.8 (ar.)

142. Maecianus, slave

gr. 1.4 1/8 (ar.)

143. Neilos, son of Mysthes

gr. 1.0 1/2 (ar.)

144. Nemesion, veteran

gr. 1.30 (ar.)

orch. 1.3 1/2 (ar.)

145. Numissianus, son of Numissianus, and Rufus,

146. his brother

gr. 1.32 (ar.)

orch. 1.5 (ar.)

147. Numissius, goldsmith

gr. 1.80 (ar.)

orch. 1.8 1/2 (ar.)

148. Nepotianus, son of Sabrianus

gr. 1.13 1/4 (ar.)

orch. 1.1 [1.] (ar.)

149. Numissius, son of Sabrianus

gr. 1.10 (ar.)

orch. 1.9 (ar.)

150. Nepotianus, soldier

gr. 1.11 3/4 (ar.)

orch. 1.1 (ar.)

- 151 Nikanor, son of Syros
gr. 1. 7 (ar.)
- 152 Nemesis the club-footed
gr. 1. 5 (ar.)
- 153 Neophytos, son of Ision
gr. 1. 3 (ar.)
- 154 Nomissos, son of Alkinoos
gr. 1. 1 (ar.)
- 155 Nemesilla Euterpe
gr. 1. 20 (ar.)
- 156 Valerius Mithras
gr. 1. 3 (ar.)
- 157 Valerius, from Arsinoe
gr. 1. 7 + 1. 2 (ar.)
- 158 Valerius, son of Pissas
gr. 1. 16 (ar.) orch. 1. 5 + 1. 4 (ar.)
- 159 Valerius, cavalryman
gr. 1. 23 + 1. 4 (ar.) orch. 1. 2 (ar.)
- 160 Octavianus I + I
gr. 1. 33 + 1. 18 + 1. 16 + 1. 32 (ar.) orch. 1. 3 + 1. 4 (ar.)
- 161 Oinophros, son of Mysthes
gr. 1. 1 (ar.)
- 162 Valerius, painter
gr. 1. 9 + 1. 2 (ar.)
- 163 Verus, deity from
gr. 1. 9 + 1. 4 + 1. 8 (ar.) orch. 1. 2 (ar.)
- 164 Valerius, son of Herakleinos

	gr. 1. 26 car. 3	orch. 1. 6 1/4 car. 3
165. Ptolemais, daughter of Satyros	gr. 1. 35 1/2 car. 3	
166. Pisis, son of Nestorophus	gr. 1. 13 1/4 car. 1	orch. 1. 2 car. 1
167. Publius, veteran	gr. 1. 47 1/2 car. 1	orch. 1. 3 car. 1
168. Pamskos, ex-thevion	gr. 1. 50 car. 1	orch. 1. 12 car. 1
169. Petermonthos, saddler	gr. 1. 4 car. 3	
170. Pisis, son of Hanes	gr. 1. 10 3/4 car. 1	
171. Petronius, in Sextos	gr. 1. 8 car. 1	
172. Paspysenos, son of Arabus	gr. 1. 12 car. 1	
173. Ptolemaios, soldier	gr. 1. 5 car. 1	
174. Paxis, son of Syros	gr. 1. 4 car. 1	

Cist. VI

175. Papiros, son of Ignatios, and his brother Diogenes	gr. 1. 7 car. 1
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- 176 P. gr. 4. 3 (ar.)
- 177 Pollis, son of Dioskorus
gr. 4. [...] (ar.)
- 178 Pa. orch. 1. [...] (ar.)
- 179 Potamon, son of Dioskorus
gr. 4 [...] (ar.)
- 180 Pasts, son of Nemestus
gr. 4. 14 1/2 (ar.) orch. 1. 5 1/2
- 181 Pasipseutis, son of Sabinus
gr. 4. 2 (ar.)
- 182 Pasion, son of Dioskorus
gr. 4. 1 1/8 (ar.)
- 183 Pasis, son of Pasipseutis
gr. 4. 1. 1 1/2 (ar.)
- 184 Pasion, son of Pasis
gr. 4. 1 (ar.)
- 185 Sarapionnere, physician
gr. 4. 20 [...] (ar.)
- 186 Sabinianus, veteran, in Nestou
gr. 4. 22 (ar.)
- 187 orch. 1. 2 (ar.)
- 188 Syron, son of Numenius
gr. 4. 14 1/2 (ar.) orch. 1. 1 1/8 1/16 (ar.)
- 189 Sempronius, soldier
gr. 4. 21 (ar.) orch. 1. 1 1/8 1/16 (ar.)
- 190 Setenus, tesseraatus
gr. 4. 20 (ar.)

- 191 Sarapion, son of Pasis
gr 1.4 car 1
- 192 Sarapion, son of Chraikos
gr 1.11 car 1 orch 1.3 car 1
- 193 Sarapionion, son of Valerius
gr 1.10.14 car 1
- 194 Serenus, son of Zorilos
gr 1.11 car 1
- 195 Serenus, son of Leonides
gr 1.1.3 car 1
- 196 Sarapion, 1.1.1 in Nestor
gr 1.1.1 car 1
- 197 Sarapion, 1.1
gr 1.7.13.14 car 1
- 198 Serenus, son of Heras
gr 1.8 car 1
- 199 Sarapion, wife of Artemidoros
gr 1.1 car 1
- 200 Sarapion, son of Arcio
gr 1.3 car 1 orch 1.1 car 1
- 201 Stratippos, son of Diogenes
gr 1.24 car 1 orch 1.10.12 car 1
- 202 Serenus Agallippos
gr 1.5 car 1
- 203 Satyros, son of Julius
gr 1.9 car 1 orch 1.6 car 1
- 204 Serenus, son of Julius

- gr. 1. 27 car. orch. 1. $3\frac{1}{2}$ car. 1
- 205 Titus, from Aphroditopolis
gr. 1. 40 car. 1
- 206 Laesis, daughter of Ch. Ankrantouf
gr. 1. 1 car. 1
- 207 Furbo, bathkeeper
gr. 1. 8 car. 1
- 208 Tescuris, daughter of Pasha
gr. 1. 4 car. 1
- 209 [Qaym] Saupres
gr. 1. 60 car. 1 orch. 1. $3\frac{5}{8}$ car. 1
- 210 Chares, son of Sabinnu
gr. 1. 8 car. 1

Col. VII

- 211 Ch., son of Idoneu
gr. 1. 7 car. 1
- 212 Ch. gr. 1. 4 $\frac{1}{2}$ car. 1
- 213 Hor. gr. 1. 9 car. 1
- 214 Hor. gr. 1. 8 car. 1
- 215 [] gr. 1. 98 $\frac{3}{4}$ car. 1 orch. 1. 6 $\frac{1}{4}$ car. 1
- 216 []
- 217 and [] has been indicated
- 218 by the [] who have preceded me
- 219 gr. 1. 570 car. 1 orch. 1. 44 $\frac{1}{4}$ $\frac{1}{16}$ car. 1

- 220 The 25th year of Marcus Aurelius Severus
- 221 Antoninus Pius/Maximus
- 222 Britannicus Maximus Germanicus
- 223 Maximus Pius Augustus
- 224 I, Aurelius Pasion, village secretary, have submitted (this list)

NOTES

[Αἰρηζῖαν Πασῖον]sk. Autelios Pasion is mentioned also as village scribe of Philadelphia in P. Mich. inv. 5299a (published by P. J. Sijpesterp, *ZPE* 106 (1995) 219, 220) – a document on nomination of liturgists (A.D. 215/6). This document was not acquired in the same way as I.37, but was found during the 1928/9 excavations at Karanis (see Sijpesterp 219, n. 21).

ἐπιτροπικὸν ζήτημα. The term was probably taken from the official order to levy the special tax. See *AB XIV* 11651.2–4 (Middle Egypt, A.D. 231–233/4): ἐπιτροπικὸν ζήτημα ἐπιτρεθέν ἐκ τῆς θεῆς [ἐπιτάξεως τοῦ τοῦ κυρίου ἡμεῶν Ἀύτου κρατοῦς, Κωνσταντοῦ Μαρκοῦ Αὐτοῦ τοῦ Στρατηγῶν Ἀλεξανδρείας, Ἰουλιανῶν, Σεβαστοῦ] [καὶ Ἰουλιανῶν Μικροῦ, τοῦτοῦ Σεβαστοῦ καὶ τοῦτοῦ στρατοπεδίου καὶ συγκλήτου τῆς ἡμετέρας Σεβαστῆς. This passage comes from a letter addressed to the strateg and royal scribes of the Heptanomia and Arsinoite in preparation for a visit of Severus Alexander and his mother Julia Mamaea.

ἡ εἰδὼς τε καὶ γεννῶν. I have found no exact parallel to this expression in this period. These two words, however, are already opposed in classical Greek to contrast specific and general aspects, cf. e.g. Plat. *Paenr.* 129c and esp. Aristot. *Met.* 1029b37. The expression is found again in the singular in later papyri, e.g. *BGE* I 316.37 (= *MChe.* 271, A.D. 350): ἐκ παντὸς εἰδὸς καὶ γεννῶν (a clause frequent in the fifth, sixth and seventh centuries A.D.).

316.37 (= M.Chr. 271) (see above), the seller of a slave also gives a guarantee to the purchaser, offering as a backing for his guarantee his present and future belongings, ἐν ταῦτι εἶδος καὶ γένηται. Again, as in the case of *P.Dub.* 33.17, one should understand this as "in all form of cash or kind"; but the specific meaning of εἶδος as "cash" is not always clear: in some cases it is apparently used for "kind" (*in natura*); see Preisigke, *WR IV* n57, 24.50 (l. 5). Preisigke also noted the use of εἶδος to designate payment of taxes; see *WR III* 234-235. Although one cannot claim that every occurrence of the word is to be understood as "cash", it seems appropriate to mention the particular case of *προσδότημα φόρων* (*προσδοτήματα καὶ ὀλλῶν εἶδος*). In spite of the wording itself (which must refer to an earlier stage of the collection of *προσδότημα φόρων*), this tax was collected in cash; see P.F. Supertestin, "Receipts for φόροι, προσδοτήματα and Other Taxes" *ZPE* 57 (1991) 263-267 (see also *ZPE* 309 (1995) 102). Since it has been demonstrated independently by Supertestin that *προσδοτήματα* refers to a tax paid in cash, the expression ὀλλῶν εἶδος can implicitly refer also to payments in cash.

10. Ἀνελίας Ἀπρίων καὶ οἱ γαμνητοὶ αὐτοῦ. This is the well-known Avelius Aprion, nomarch of the Aesimone nome, for which see G. Messeri / R. Pataudi, "Aprion, nomarque de l'Aesimone", *ZPE* 126 (1998) 131-144, esp. 136-140, 25 in the list established by Messeri / Pataudi. In *SB VI* 9562.1-2 (Philadelphia, AD 214), his status of *εὐρχος* (Ἀνελιανός) is explicitly mentioned: Ἀνελίας Ἀπρίων (ἐμπροσθεν τῆς κομπροστομίας πόλεως) τὸν Ἀνελιανόπου καὶ οἱ γαμνητοὶ αὐτοῦ. The latter text is an application for the lease of *scotouras* of land belonging to Avelius Aprion.

11 Αἰρηλῆιος[?] Εργαίης ὁ καὶ Ἀπολλωνίου. His status of ἑργαῖος Ἀλεξανδρίου is confirmed by *P. Alex. Goss.* 5.1 (Arsinoite nome, A.D. 215): [Αἰρηλῆιος] Ἐργαίης τὸ καὶ Ἀπ[ο]λλ[ο]ν[ι]ου νεοκώμης τὸ μέγιστον· [Σοφρόπιδος] γενομένου στρογγυλῆς τῆς ἀντιπροποσῆς πούρου· [τῶν] Ἀλεξ[ανδ]ρίων[?] μεθ' αὐτῆς καὶ οὐκ ἐγγεγραμμένων. In the ptochus from 216 to 219, he issues tax receipts for the γροῖος προβλήτου in the Arsinoite nome; see *P. Lond.* III 851 (p. 48). He appears again in *P. Colon.* 11.1-2 (Philadelphia, A.D. 204/5): Αἰρηλῆιος Ἀπολλωνίου γενομένου προβλήτου τῆς ἀντιπροποσῆς πούρου· τῶν Ἀλεξανδρίων 11 ἄρουραι. In this document, two villagers (not Dioscori of Satrapinnou; see below, line 74) offer to lease from Apollonius six arouras of land, five of which belong to a date grove. These five arouras must be included in the 16.1-2.18 arouras presently recorded as orchard land.

13 Γόνος Θεοδόσιος Κηλάρης ὁ καὶ Φιλοξένος. He appears in *P. Colon.* 1.77 (Philadelphia, III A.D.), without the *provenance*, and in *P. Colon.* 1.72, simply as Philoxenos (see the new edition of these two papyri forthcoming). *P. Colon.* 1.72 is dated 101 (year of a 19th year emperor not specified). On the basis of the writing, it can be assigned to the third century; it should therefore be dated more precisely to 4 July 211.

Gonos Valerius Celestus (aka Philoxenos) is to be found also in *P. Stras.* IX 897-15 (III A.D., provenance unknown). His name appears in the publication as Γόνος Θεοδόσιος· ὁ καὶ Φιλοξένος. J.-F. Goulet (Strasbourg) kindly checked the text for me and confirmed the following reading: Γόνος Θεοδόσιος· Κηλάρης ὁ καὶ Φιλοξένος. *P. Stras.* IX 897 is a short list of names with surfaces of land (Philoxenos has 2 arouras under his name). Another Valerius Philoxenos, found in *P. Lond.* II 188,85 (p. 141

1461 [see also *BGC* II 585 = *CPI* III 471, *ZPE* 73 (1988) 56] may be the same person, although this is far from certain.

14 Γενέλας ἀπὸ ἐκκυστορχίου: A [Γ]ενέλας ἐκκυστορχίου appears in *P. Berl.* 49.36 (provenance unknown, II c. A.D.), but it is not possible to establish a certain link between the two occurrences of this name. On the title ἀπὸ ἐκκυστορχίου, see *P. Oxy.* XI-VII 3365.14 (A.D. 241) Ἰωάννης ἀπὸ ἐκκυστορχίου. In later documents, editors have resolved the abbreviation as ἀπὸ ἐκκυστορχίου (of centurion rank; see *PSI* VI 713.22 + III A.D. Κορυμαγιμένη γινώκη Ἱεροκλατοῦ ἀπὸ ἐκκυστορχίου, *P. Coll. Berl.* 91.3.4 (A.D. 309) Ἀνρήλιος Νίλως οὐρανότοκος ἐκτιστοῦ ἀποδολογίου ἀπὸ ἐκκυστορχίου, *P. Flor.* III 320.3 (A.D. 373) φθάνει ἀδύνη ἀπὸ ἐκκυστορχίου. It apparently follows the Latin terminology, e.g. *triatumiliarius*, which is frequent in the sixth century.

15 ἀρχόντων ἐκτοῦτων καὶ ἀρχιδυτικῶν. See *P. Oxy.* XXII 2346.23 (and note ad loc.) ἀρχόντων καὶ ἀμυντῶν. C. H. Roberts understood the word ἀρχιδυτικός tentatively as 'member of a family which has provided archons'. See also *PSI Rev. Suppl.* cv, ἀρχόντων where ἀρχόντων καὶ ἀμυντῶν is translated by 'people of rank and commoners'. The occurrences in *CPR* V 12.13 and 19, and 17.8, do not help us understand the word. In 137, the expression ἀρχόντων ἐκτοῦτων καὶ ἀρχιδυτικῶν seems to confirm Roberts' translation. A more simple explanation however might be that the whole heading refers to metropolitans, as opposed to Alexandrians and villagers; see above, introduction. On the question of civic status, see C. A. Nelson, *Status Declarations in Roman Egypt* (Amst. Stud. Pap. 19, Amsterdam 1970).

17 $\tau\omicron\upsilon\beta\epsilon\tau\tau\omicron\varsigma \epsilon\pi\gamma\epsilon\mu\epsilon\tau\epsilon\lambda\epsilon\upsilon\sigma\tau\omicron\varsigma$. See *BCH* VII 1617-27 (Philadelphia); $\kappa\lambda\eta\rho\epsilon\upsilon\mu\epsilon\tau\omicron\varsigma \tau\omicron\upsilon\beta\epsilon\tau\tau\omicron\varsigma \epsilon\pi\gamma\epsilon\mu\epsilon\tau\epsilon\lambda\epsilon\upsilon\sigma\tau\omicron\varsigma$. This latter text is dated to Mechen 6 of a 6th year, that is 5 March 198 or 227. The publication of 137 now makes the dating to 227 almost certain, unless one were to consider dating *BCH* VII 1617 to 243 (Gordian III's 6th year).

18 An oblique stroke can be seen at the end of the line, due to the gap on the left of the stroke. I do not feel that I can offer a satisfactory explanation.

19 $\Lambda\omicron\upsilon\gamma\epsilon\mu\epsilon\tau\omicron\varsigma \Theta\epsilon\rho\mu\omicron\theta\alpha\tau\omicron\upsilon\sigma\iota\varsigma$. Longina Thermothonion also appears in *BCH* XIII 2280 (Bacchias, A.D. 203), a tax receipt for the vineyard tax ($\epsilon\lambda\epsilon\upsilon\tau\epsilon\rho\epsilon\mu\epsilon\tau\epsilon\lambda\epsilon\upsilon\sigma\tau\omicron\varsigma$) and for the olive-tax ($\epsilon\lambda\epsilon\upsilon\tau\epsilon\rho\epsilon\mu\epsilon\tau\epsilon\lambda\epsilon\upsilon\sigma\tau\omicron\varsigma$). In *BCH* II 558 no. 15 (early III A.D.) she owns land in Sebentylos (Asmonite nome, division of Herakleides). She thus owned land also in places other than Philadelphia. In *BCH* II 614-5 (Asmonite nome, April 217), there is a mention of Longina Thermothonion's heirs. Her death must have occurred between the writing of 137 and that of *BCH* II 614. We thus have a *terminus ante quem* for the register. A Longina Thermothonion also appears in *P.Mich.* IV 224 (130), a register from Karanis; the date of this document (A.D. 172/3) makes an identification improbable, although not impossible. See also note to line 98.

20 $\Lambda\omicron\upsilon\kappa\rho\eta\tau\omicron\varsigma \epsilon\pi\gamma\epsilon\mu\epsilon\tau\epsilon\lambda\epsilon\upsilon\sigma\tau\omicron\varsigma$. A Lucretius appears as $\epsilon\pi\gamma\epsilon\mu\epsilon\tau\epsilon\lambda\epsilon\upsilon\sigma\tau\omicron\varsigma$ ($\epsilon\gamma\mu\epsilon\tau\epsilon\lambda\epsilon\upsilon\sigma\tau\omicron\varsigma$ in office) in a receipt addressed to the $\pi\rho\epsilon\phi\beta\epsilon\tau\epsilon\mu\epsilon\tau\omicron\varsigma$ (count) of Soknopaiou Nesos, see *VR V* 957-11.2 (II A.D.). This is probably the same man who appears also in *BCH* I 121-1.2 (17 W.C.D. 184, Asmonite nome, A.D. 194), but the name Lucretius is too

frequent to warrant a certain identification. In *P Red II* 206a.14 (see above, introduction), probably the same man is recorded as either $\Lambda\omicron\omicron\epsilon\pi\omicron\tau\iota\varsigma$ $\pi\alpha\upsilon\sigma\tau\iota\alpha\varsigma$ $\rho\acute{\alpha}\varsigma\epsilon$ or $\Lambda\omicron\omicron\epsilon\pi\tau\iota\varsigma$ $\pi\alpha\upsilon\sigma\tau\iota\alpha\varsigma$ $\rho\acute{\alpha}\varsigma\epsilon$.

22 $\Pi\omicron\tau\epsilon\pi\tau\iota\alpha\varsigma$ $\pi\alpha\upsilon\sigma\tau\iota\alpha\varsigma$ $\rho\acute{\alpha}\varsigma\epsilon$. This man is known by his full name, Marcus Aurelius Papirius, in a receipt from Philadelphia, *BGT* A II 1656.1 (AD 213/4: $\Μ\omicron\upsilon\sigma\kappa\omicron\iota\varsigma$ $\Lambda\upsilon\kappa\acute{\alpha}\lambda\iota\omicron\varsigma$ $\Pi\omicron\tau\epsilon\pi\tau\iota\alpha\varsigma$ $\pi\alpha\upsilon\sigma\tau\iota\alpha\varsigma$ $\rho\acute{\alpha}\varsigma\epsilon$ $\lambda\omicron\upsilon\sigma\tau\iota\alpha\varsigma$ $\tau\iota\varsigma$ $\Lambda\pi\omicron\iota\upsilon\sigma\tau\iota\omicron\upsilon$ $\pi\omicron\lambda\iota\varsigma$). He appears again in *P Dage* 34.1.2, probably originating from Philadelphia (AD 222-234).

23 $\Lambda\iota\{\mu\eta\{\lambda\iota\alpha\}$ $\tau\iota\tau\omicron\upsilon\tau\iota\{\}$. This is probably the same Titania as appears in *P Hamb* 1.18 and her Asmonite name AD 200, where, along with three other persons, she sells a small part of a house in Philadelphia for 100 drachmas to Antonia Thermionthion (see line 42). In *P Hamb* 1.10.16.18, her guardian is her son, Claudius aka Ptolemaios, ex high priest of the city of the Asmonites.

28 $\{\rho\omicron\sigma\phi\iota\}$. Prosperity is $\tau\eta\eta$ $\kappa\omicron\omicron\tau\iota\{\}$, in which case this line could contain a heading or a summary of the preceding list. There would then be 12 metropolitan magistrates in the list, although it seems difficult to press the argument on the basis of this reading.

32 $\Lambda\sigma\kappa\lambda\eta\pi\iota\alpha$ Λ $\tau\iota\alpha$. Probably $\Lambda\sigma\kappa\lambda\eta\pi\iota\alpha$, $\Lambda\sigma\kappa\lambda\eta\pi\iota\omega$, but the patronymic is illegible.

38 $\{\iota\gamma\}$ $\tau\iota\alpha$ $\Lambda\iota\sigma\tau\epsilon\iota$. This place name, elsewhere called $\tau\iota\alpha$ $\Lambda\iota\sigma\tau\iota\omega$ ($\tau\iota\sigma\tau\epsilon\iota\omega$), is found ten times in this register (see also 80, 81, 88, 97, 110, 118, 111, 136, 196). It is most intimately connected with Philadelphia from

Ptolemaic times on. See Calverley / Davis, *Dictionary dei nomi geografici*, s.v. Νέστος ἐπὶ Κόιν, *P Coll.* 22 (Philadelphia, I A.D.) confirms the close connection between Philadelphia and Nestos. It is a census roll listing persons domiciled in other villages. Almost half of them (56 out of 125) are called Νεστονοκίται: to be understood as Νεστο-ἐπισκοπότης.³¹ In *P Wisc.* 8 (Philadelphia, A.D. 386) two people οὐνο τοῖς Νέστον ἐπὶ Κόιν agree to pay arrears of rent for land in Philadelphia. From 137 as well as from the two documents mentioned, it is clear that land belonging to residents of Nestos were administered from Philadelphia, and that Nestos was usually a part of Philadelphia.

41. Ἀρμπα; Ηἰσὶν Πάριζα. See *P Hamb.* III 225, 16 (Philadelphia, 41/41 A.D.); Ηἰσὶν Πάριζα.

42. Ἀρτωμένη Θερμοδέρπυ. This woman is to be found also in *Bell.* VII 161² 18-19 (Philadelphia, A.D. 227, see above, note to line 17), where she pays 12 drachmas in taxes. In *P Hamb.* I 15 (Philadelphia, 30 Sept. 209), she buys a small part of a house in Philadelphia for 100 drachmas (see also above, note to line 23). She avails herself of the *lex trium liberorum*, and her age is given as 46 years. At the time when 137 was written, she was therefore 84 years old. *P Hamb.* I 161² Oct. 209) deals with the same business as *P Hamb.* I 15. Finally, *P Ross. Georg.* A 58.4-5 should be read: Ἀρτωμένη οὐνο τοῖς οὐνο τοῖς, Ἀρτωμένη Θερμοδέρπυ. In this land register, 8 names are listed under the name of Antonia Thermostraton's son. For the dating of this papyrus, see *P Diss.* 44.45 (p. 243).

48 στρεπτομένης. This abbreviation recurs in lines 48, 67, 150, 173 and 189. I cannot think of a plausible alternative to resolve the abbreviation. It should be noted that, in all five instances, the names followed by στρεπ- are men's names; also, in two out of five instances, the name is a Latin one (150: Nepotianus; 189: Sempronius). Soldiers on active duty were in principle prohibited from purchasing land in the provinces where they were serving. See N. Lewis, "Soldiers Permitted to Own Provincial Land", *BASP* 19 (1982): 143-148, which quotes the *Constitutio of the Idios Logos* (S 111 = BGU V 1210, 43), along with *Digest* 49, 16, 9 (Marcian) and 18, 1, 62, *pr.* (Modestinus). Lewis shows that the possibility for soldiers of purchasing land previously confiscated from their fathers for fiscal debt was probably already in force in Egypt around AD 185/6, that is forty years before the relevant Severan legislation. In essence, such purchases would have been a kind of reclaiming of land. This in turn seems to indicate that – in contrast with purchase – ownership of land was not prohibited, as long as the land had been acquired either before enlistment, or through inheritance. See R. Aston, *Soldier and Society in Roman Egypt* (London / New York 1995) 59.

57 Επελάλι[το]ν ἀδελφόνον. See *P. RyI* II 206a, discussed in the introduction.

60) Ἀποδόμη Πρυμ[υ]όνων; ἀδελφόν. There may be two sisters, in which case one should read Ἀποδόμη Πρυμ[υ]όνων; καὶ ἡ ἀδελφόν.

66) Ἀπογένης ἀδελφόνον; Πόν. See line 175: Παιδόν; Ἰγνατίου καὶ Ἀπογένης ἀδελφόνον; Πόν. could be Diogenes' nickname.

68 Ἡρακλεία γυνὴ Μύσθου. This name is placed among names beginning with letter Δ, against the alphabetical order. It follows Δίδυμος στρατιώτης (line 67). The only other occurrence of such a case is to be found in line 138, where the veteran Nemesis is listed before Μούσα γυνὴ Διογένους οὐατρωνοῦ (line 139). This double occurrence suggests that, in both cases, a husband and a wife could have been placed together in the register. In lines 86-88, Heraklas and his two wives Herakleous and Herakleia could be listed in succession without breaking the rule of alphabetical order, where only the first letter of the name was taken into account. Such an explanation for the apparent misplacing of Herakleia wife of Mysthes would lead to the translation "Herakleia, (this) wife, daughter of Mysthes". In line 139, one should then also translate "Mousa, (his [i.e. Nemesis'] wife, daughter of the veteran Diogenes". Against such an interpretation, one should note that: a) in line 55, γυνὴ Μιζωνος does not leave any doubt that the genitive refers to the husband, and not to the father; b) in lines 75 and 199, understanding the genitive as a patronymic would require that the husband's name begin, in both cases, with the same letter as his wife's, which is not very probable. If such a grouping of husband and wife should nevertheless be accepted, the practice is not consistent with other forms of grouping: the cavalryman Valerius is to be found in line 159, under letter Ο (for Οὐαλέριος), whereas his sister is listed in line 49, under letter Α (for Ἀδελφὴ Οὐαλέ[ρ]ιον[ος]).

69 Διόδωρος Γερενκίτ. I have found no parallel for the name Γερενκίτ. It could be Diodoros' nickname.

72 Διογένης Ἀντωνίου Κοζαβίλ. The name Κοζαβίλ could belong to Diogenes' grandfather. A Diogenes, son of Antonius, is to be found in

P.Hamb. III 225.18 and 26. The name Kalabel is found only at Soknopaiou Nesos (except for *P.Mich.* IV 357a.19, from Karanis, A.D. 173/4), or, when the precise origin is unknown, it is invariably the Arsinoite nome. All datable occurrences are from the beginning of the third century. See e.g. *B.G.U.* II 392.36; 639.7; *P.Turner* 32.15.

⁷³ $\text{Αυγομένης Διογενίου Ὑποδόμου} \mu\epsilon\tau\omicron\iota\varsigma$. See *P.Dog.* 27.26: $\text{Αυγομένης Ὑποδόμου} \mu\epsilon\tau\omicron\iota\varsigma$, and note ad loc. The Diogenes listed here is probably Marcus Lucretius Diogenes, for which the archive *P.Dog.* was named. In *P.Dog.*, I suggested that $\text{Ὑποδόμου} \mu\epsilon\tau\omicron\iota\varsigma$ could be a toponym, but I have found no other parallel. This adjective is derived from $\mu\epsilon\tau\omicron\delta\omicron\mu\omicron\mu\epsilon\tau\omicron\iota$ ('running by'), or connected more probably to $\mu\epsilon\tau\omicron\delta\omicron\mu\omicron\mu\epsilon\tau\omicron\iota\varsigma$ ('place for taking the air'), see e.g. *P.Oxy.* III 802.19 (Oxyrhynchus, A.D. 163), *P.Flor.* I 50 n.60 (Hermopolis, A.D. 260). This could be a nickname.

⁷⁴ $\text{Αντὶς Σιτροποπολεως}$. In *P.Corn.* 11 (Philadelphia, A.D. 204/5-6), Dios makes a joint offer with another villager to lease six $\alpha\sigma\tau\omicron\rho\alpha\varsigma$ of land from an Alexandrian, Aurelius Apollonios (see above, line 11).

⁷⁶ Αντινής , Τετρίν or Τετρίν. The village of Tami is close to Philadelphia (ca. 10 km.), see e.g. *P.Dog.* 40. Τετρίν could be a nickname (instead of a patronymic). I owe the following information to Prof. A.E. Hanson, to whom I express my gratitude: "Τετρίν is a name known principally at Philadelphia (for other occurrences of the name as of 1970, see *P.Mich.* X, p. 4 and footnote 6, introduction to *P.Mich.* X 578). While G.M. Browne was wrong to argue that the 'year 6' in this papyrus is probably 22/23 (it should be 345/46), even the first-century [Philadelphian] tax archive has only a few men named Τετρίν, and they seem to be related."

77 Ἀσπίνη2 οἰατοῦ ἀνὰ ἐν τῷ Πέπρ. See *P.Ryl.* II 206a, discussed in the introduction. According to Calderini / Datis' *Dictionnaire des noms géographiques*, Πέπρ (on ascent: *P.M.G.* XV, p. 126-7) is the name of a κτήνη in the Arsinoite. See also *P.Leb.* II 555 (II A.D.). In our case, Πέπρ is probably to be understood as the adverb, although it is difficult to ascertain what is meant by 'beyond'.

78 Ἐπείκειος; Ἀγγίσιον. The name is to be found also in *P.Hamb.* III 225.22. In *P.Dmag.* 29.3 (Philadelphia, A.D. 225) an Aurelius Longinus, son of Hermimus, makes an offer for a lease. This Longinus could be the son of our Hermimus.

79 Πόσειδωνος σπυροῦ τεταῖς; Πουδάνου. Posidonios is known as a wealthy landowner and prominent Alexandrian from other sources; he is related to Appianus' family, for whose estate we have ample information. See Rathbone (above, footnote 19), esp. 14-15, 25 and 47. Posidonios had other agents, but Πουδάνου is not attested as such anywhere else; see Rathbone 75.

80 Ἐπείκειος οἰατοῦ ἀνὰ ἐν τῷ Νεττῶ. See *P.Ryl.* II 206a, discussed in the introduction.

82 Ἐπείκειος οἰατοῦ ἀνὰ ἐν τῷ. See *P.Ryl.* II 206a, discussed in the introduction.

86 Ἐπαρκτοῦ οἰατοῦ ἀνὰ ἐν τῷ. See *P.Ryl.* II 206a, discussed in the introduction.

86-88. It seems that we have here a case of bigamy. Heraklas has a first wife in Philadelphia (Herakleous), then a second wife in Nestos (Herakleia). This goes against the pattern emerging from the census returns from Roman Egypt, where "marriage is monogamous", see R. S. Bagnall / B. W. Frier, *The Demography of Roman Egypt* (Cambridge 1994) 121. Cases of bigamy are nonetheless traceable in a number of instances, see J. Rowlandson (ed.), *Women and Society in Greek and Roman Egypt. A Sourcebook* (Cambridge 1998) 170, 188 and 209.

91 Βρεζοντις. The use of the adjective points to an immigrant, whereas εἰς τὸν Καρανὶδὸν (line 98) refers to a resident of Karanis who owns land in Philadelphia.

98 [Ἰουλιανὸς ἢ ἀδελφεὸς τῶν Καρανιδῶν. A Τριζυριανὸς Πανουρίης appears in *P. Oxy. Papyri* 30 xxiii 16 and 20 xxix 17 xxxix 20, sh. 3. This document comes from Karanis and is dated A.D. 191/2. This person is also found in *P. Mich.* IV 224-227 from Karanis, A.D. 172/3. Although it is not impossible that we are dealing with the same man here, the time span between these three documents seems rather long. See also note to line 10. Οὗτος Καρανιδῶν, see note to line 91.

100 [Ἰουλιανὸς ἀνὴρ ἐπὶ στρατῷ. For a parallel to a veteran called Iulianus in Philadelphia in this period, see *P. Hercul.* III 225-14 (III/A.D.).

101 Ἰουλίη Τριζυρία. Iulia Tertia is found also in *RGE* II 567-28 (II A.D. 76) where she has lent 200 drachmas to a man called Diogenes.

107 $\epsilon\lambda\eta\ \rho\omicron\upsilon\sigma\iota\mu\omicron\iota$ $\tau\epsilon\chi\alpha\delta\iota\omicron\tau\omicron\ \Delta\omicron\upsilon\gamma\epsilon\nu\omicron\varsigma$ See line 175. $\tau\epsilon\chi\alpha\delta\iota\omicron\tau\omicron$ $\tau\epsilon\chi\alpha\delta\iota\omicron\tau\omicron$ $\epsilon\kappa\tau\omicron\ \Delta\omicron\upsilon\gamma\epsilon\nu\omicron\varsigma$ $\epsilon\iota\delta\epsilon\lambda\omicron\gamma\omicron\varsigma$ In *P. Hercul.* III 224-11 (Philadelphia?), ICH A.D. 1, Ignatius Diogenes is still living. With 137, we have a *terminus ante quem* for this other document.

113 $\epsilon\lambda\eta\gamma\omicron\upsilon\sigma\epsilon\nu\omicron\mu\omicron\iota$ $\rho\omicron\upsilon\sigma\iota\mu\omicron\iota$ $\Sigma\epsilon\pi\alpha\tau\epsilon\nu\omicron\varsigma$ In *P. Price* 45-51 (Philadelphia, dated before 216?), on the basis of 137, Rufus son of Sarpion is still alive, and holds civic rank. In *Rec. VI* 1612-14 (Philadelphia 227, see above, note to line 17) the heirs of Rufus son of Sarpion pay 12 $\delta\iota\alpha\chi\omicron\mu\alpha\iota$ in taxes.

121 $\tau\eta\epsilon\sigma\upsilon\mu\iota\omicron\varsigma$ Probably the same as $\tau\eta\omicron\mu\alpha\iota\omega\iota$ but I have found no other occurrence of this spelling.

122 $\tau\alpha\tau\epsilon\tau\omicron\iota$ I have found no parallel to this name. It seems to be formed on the same model (e.g. $\Lambda\gamma\epsilon\iota\tau\epsilon\tau\omicron\iota$ of No. 69).

124 $\kappa\omicron\tau\tau\alpha\iota\theta\eta\varsigma$ $\alpha\tau\kappa\tau\alpha\iota\tau\omicron\iota$ $\Lambda\kappa\tau\alpha\iota\theta\eta\varsigma$ $\alpha\tau\kappa\alpha\iota\tau\omicron\iota$ $\kappa\omicron\tau\tau\alpha\iota\theta\eta\varsigma$ appears in *P. Munch.* III 144-2 (Aesoneia no. 11 A.D. 1) but identification is less than certain.

125 $\theta\iota\varsigma\epsilon\tau\epsilon\tau\omicron\iota$ On the *θεττ* letters, see F. Chr. *Die Buchstaben* (Historia Einzelschriften 92, Stuttgart 1995), esp. 145 and 183-4.

126 $\Lambda\gamma\epsilon\iota\tau\epsilon\tau\omicron\iota$ or $\epsilon\tau\epsilon\tau\omicron\iota$ See *P. Rec.* II 206a, discussed in the introduction.

128 $\Lambda\gamma\epsilon\iota\theta\eta\varsigma$ or $\gamma\epsilon\iota\theta\eta\varsigma$ $\Lambda\gamma\epsilon\iota\theta\eta\varsigma$ or $\gamma\epsilon\iota\theta\eta\varsigma$ can be found also in *P. Rec.* II 206a.15, see introduction.

[33] Μέλας ἰατρός. A physician named Melas is also to be found in *Stud. Pal.* XXII 67-262 (Soknopaiou Nesos, III/II A.D.).

[34] Μισθ[η]ζ[ε] ὀφεισόμενος τέσσαρ[ε]ς ἄρτους. See *BGUF* VII 1638a,9 (Philadelphia, II A.D.): Μισθ[η]ζ[ε] ὀφεισόμενος τοῦ Σαμβ[ί]η τη τροφῇ τοῦτο[υ] [μ]ισθο[ς]. The Greek word ὀφεισόμενος : τέσσαρ[ε]ς stands for Latin *tersorum*, see S. Datis, *Il lessico latino nel greco d'Egitto* (Barcelona 1991), s.v. τέσσαρ[ε]ς.

[35] γρ[α]μματεὺς ὁπορχήσας. I have found only one parallel to this office, in P.Oxy. III 642 (Oxyrhynchus, II A.D.).

[36] Μισθολογίων Κοπτεριών. See *P.Ryl.* II 206a, discussed in the introduction.

[38] Νομιστὴς ἀποτροπῶν. See *P.Doug.* 45-33, see also note to line 68 (above).

[40] Μισθ[η]ζ[ε] ἐχαισουργία. See *P.Doug.* 45-48. Μισθ[η]ζ[ε] ἐχαισουργία πάλι τοῦ ἐνθ[ι]μο[ς] [α]ἵ[ε].

[43] Νεῖκος Μισθ[η]ζ. See *P.Doug.* 45-35. Μισθ[η]ζ Νεῖκος καὶ Νεῖκος αἵ[ε].

[44] Νομιστὴς γρ[α]μματεὺς. See *P.Doug.* 45-15. Νομιστὴς ἀπὸ τοῦ χρησμοῦ αἵ[ε]. Also *BGUF* VII 1617-8 and *P.Ross. Georg.* V 58-55 and 47. On goldsmiths, see S. Russo, *I gioielli nei papiri di età greco-romana* (Firenze 1990), 278, 279.

149 Νουμισσιος Σαρπμυς. The name Σαρπμυς is to be found elsewhere only in *P.Beza. Genoe.* V 58.25: Απολυτοϋ[ι]ος Σαρπμυς. Since this document originates from Philadelphia, and is to be dated to roughly the same period as our register, it is quite likely that both persons are the offspring of the same Sarimmas.

152 κυλλός. This word ("club-footed") is attested unambiguously as a nickname in *P.Coll. Youtie* II 105.3-4 (Panoopolite nome, II-IV A.D.): Ἀγριος ὁ κυλλός. In other instances where the word has been understood as a personal name, it can also be easily taken as a nickname; see *P.Beza.* 38.9; *P.Herm. Beza* 7.13 (Ψος κυλλός wrongly corrected into Ψος καλλων; *P.Mich.* IV 224.144) and 225.24-34. See also note to line 202 for a possible nickname with the opposite meaning.

157 ὑπὸ Ἀρσινόης. This refers probably to the village of Arsinoë in the division of Herakleides, for which see *P.Febt* II, Appendix II, § 5, p. 369-370; S. Daris, "Minima geographica 3.4", *CdE* 62 (1987) 228-233, esp. 230-233.

162 ζωγράφος. Possibly a painter who produced mummy portraits. See M.L. Bierbrier (ed.), *Portraits and Masks. Burial Customs in Roman Egypt* (London 1997).

167 Πόμπλιος σάτρινος. See *BGT* VII 1658.1-3 (Philadelphia, A.D. 234): Ἀνρόβλιος Σερήνος υἱὸς Πόμπλιου ὁ σάτρινος τῶν ἐκτίμων ἀποβλαβέντων καὶ ὡς χρηματίζοι.

169 Πετερροῦθις σαγματοπόρος. Another saddler is active in Philadelphia in roughly the same period, see *P.Hamb.* III 224.15: Ἀπολλῶς σαγματοπόρος. Yet another saddler is to be found in Karanis in A.D. 191/2, see *P.Cair. Goodspeed* 30 xxxvii 19. For other occurrences of this trade, see *P.Genova* I 24.9 (prov. unknown, IV A.D.); *P.Ross-Georg.* V 61, fr. a 10 (Herakleopolite nome ? IV A.D. ?); *SB X* 10447 18 (Herakl. nome ? III B.C. ?).

175 Παύλος Τρυαδίου καὶ Διογένους ἀδελφοί. See line 107: κληρονόμοι Τρυαδίου Διογενούς, δδο: Διογενὲς αὐτῶν τριανός, Ψάις.

179 Ποτάμιον Διοσκόρου. See *P.Dag.* 44.17: Ποτάμιον Διοσκόρου.

182 Ποτάμιον Διοσκόρου. See *Stud. Pal.* XX 65.4 (prov. unknown, A.D. 213/4). Διοσκόρος Ποτάμιου τοῦ Διοσκόρου. The dating of this document would make an identification very tempting; but other names occurring in the text do not lend any support for locating it in Philadelphia.

185 Σαραπίωνος ἰατρος. See *P.Ryl.* II 206a (discussed in the introduction), where Sarapionnon is also ἰατρος.

186 Σαβινιανὸς οὐκ ἐστὶν ἀνὴρ [iv] τῶν Σάβιων. See *P.Ryl.* II 206a, discussed in the introduction. A veteran called Sabimianus is also found in *P.Hamb.* III 225.13 and 36.

190 Σερήνος Θεσσαρίτης (= *tesserianus*). See *P.Ryl.* II 206a (discussed in the introduction), where Serenus is called a τῆσσαρχίανος; see also note to line 134.

191 Σαρπηδίας, ἡμετέ[ρ]ου. On Archibut Sarapion, son of Pasts, see *P Dac.* 29.2 (Philadelphia, AD 225-35) = *Phil.* 1 (AD 221/2), 53.6 (= *Phil.* 1.11) AD 1. He is the agent of Marcus Iacchides Diogenes II, see *P Dac.* 1.15 (also more recently *P Mich.* XVIII 794).

192 Σαρπηδίων, ὁμοῦρον. In AD 204, Sarapion, son of Euthros, is ἀποκτατογράφος of Philadelphia, see *P Hercul.* III 211.8. The same man occurs ~~again~~ in *P Hercul.* III 225.28. He shares his position of ἀποκτατογράφος with Serenios, son of Zophos, who is to be found in 137 at line 194.

193 Σαρπηδογράφος, ὁμοῦρον. In *P Dac.* 11.23 and 12.17 (Philadelphia, AD 123) Sarapatsimon, son of Valerius, is named as ἀποκτατογράφος. This should probably be read as ἀποκτατογράφος ἀποκτατογράφου, as in *P Dac.* 1.15. There is no parallel to this title, for which we note, at least, it apparently applies to a person in charge of drafting documents in the presence of six witnesses, and collecting the fees on such documents.

194 Σαρπηδίων, ὁμοῦρον. See above note to line 192, also *P Hercul.* *Caes.* V 58.88 and *P Dac.* 1.15.10.17.

200 Σαρπηδογράφος, Ἀνδριανός. See *P Dac.* 15.21. Stratippes, son of Diogenes, is listed as providing a certain number of animals of which the names are damaged, and the number, which is not specified in *P Dac.* V 17.13.6, is exempt from payment of taxes. Anomalous name. AD 208 or 9, both Stratippes and his father Diogenes ~~live~~, *the same name*, they are Marcus' sons. At that time, Stratippes is not yet of age, and his father

Diongeos apparently gives to Stratippos' sister some land located in Philadelphia and belonging to Stratippos himself; the figures are for the most part lost.

202 *Agrothegone*. This could be a nickname "grandfather", as opposed to *Χιζυζόγ* (see line 182). It is also attested as a *synonym*, e.g. *O.Wildt* 1482.2-4 *Agrothegone* (see on *Agrothegone*).

205 *Agrothegone* (line 1792). At least two towns in the division of Herakleides are entered under the name of *Aphroditopolis* (see *Uahleim*, Davis, *Phoenicia*, for some *restoration*). *Agrothegone* (line 1792). This entry could also refer to the capital city of the Aphroditopolite nome on the opposite bank of the Nile at a distance of c. 15 km. as the crow flies.

206 *Axyropont*. Possibly a nickname for *Alexis*.

210 *Αντίπ*, *Σοφιστος*. *Αντίπ*, *Σοφιστος* (*ἀντιπαιδαγωγός*) *καὶ* *σοφιστὴς* (*σοφιστὴς*) appears in *Metz* VII 1889 (Philadelphia, AD 168). Although damaged, the date seems secure. The older *Antip* is probably the grandfather of the person bearing the same name in our register.

215. The entry is unfortunately illegible. It comes at the end of the list just before what is probably another global entry. The surface of land listed for 1.408 *Α.4.α* (only 1.465 *Α.4.α* could allow the conclusion that this is also a global entry of some sort).

216-219. Like the preceding entry, these lines must refer to a global category. We can guess that the global entries at the end of the register

referred to private land that had, in one way or another, been abandoned or confiscated. The first word of line 24b might alternatively be read as *oñi* [əxotəw], but this is far from certain. The figures again land 300 nomas, orchard land 44 1/4 1/2 nomas seem too large for an individual. Moreover, the entry, which is the last one in the register, is split a bit longer than the usual entries. In line 2178, we can understand that the figure to follow in line 219 has been taken over from a previous assessment, made by another authority. *Ungatun* is a template to read *oñi* [əxotəw] *ungatun* [əxotəw] *oñi* [əxotəw], 'as the father of the village who have preceded us'. The office of *ungatun* [əxotəw] *ungatun* was a one-year compulsory service (see A. Lemaire *Land use in "provincia de la guinea" (Guinea)*, Bull. Acad. Roy. de Belgique, Cl. des lettres et des sciences, 3.1.1910, 1912; A.M. S. Lewis, *The Compulsory Public Service in Kinship Groups*, Pap. B.A.S. 18, London 1911, 14). This relatively high percentage of replacement could explain the wording *ungatun* [əxotəw] *ungatun* [əxotəw] *ungatun* [əxotəw] *ungatun* [əxotəw] seems to refer to an assessment made by the father of an earlier year. These fathers were directly after the village secretary on the village hierarchy, and could fulfill part of the other secretary's duties (cf. Lemaire 1914 and 1915; S.M. Bataillon 1917; A.M. S. Lewis 1911, 1912; esp. A.M. S. Lewis 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505,

aprophetspoor may have taken in the drafting of 137, it is well known that they were frequently in charge of delivering the goods for army requisitions, including special occasions such as (in the case here) see *Journal* 198-197. In spite of this very tempting suggestion, the reading itself is rather problematic, and Roger Bagnall (who kindly checked the original for me) was quite reluctant to accept this reading.

APPENDIX

Owners of private land at Philadelphia *

line	name	grain land	orchard land
Acadians			
10	Amelias Apou	10	1.7
1	Amelias Happiness	12.7	16.625
1	Elizabethe P. Happiness	17.8	0
11	James Valentinus Happiness	00	0
14	Agnes Happiness	80.0	0
M. to problems			
6	Therese Happiness	8.4	0
	Isabelle		48.8
1		0	
10	Elizabethe Happiness		8
11	Elizabethe	10	7
2	Elizabethe	21.4	2.25

To make comparisons easier, the data have been rounded following the same rules as had been used by R. S. Hart (1966) for the 1950 census. When the value appears in the first two components, it is in black, and when the value does not appear in either of the components, it is in the case, either that land is orchard land or grain land. Most of the data are shown in bold, and where some digits are lost to the printer, I have put a zero.

23	<i>Aschler Titano</i>	102	50
24	<i>Aschler Titano</i>	11	0
25		12	0
26		84	

Vallenses

01	<i>Aschler Titano</i>	4	0
02	<i>Aschler Titano</i>	11	8
03	<i>Aschler Titano</i>	1705	2
04	<i>Aschler Titano</i>		0
05	<i>Aschler Titano</i>		1
06	<i>Aschler Titano</i>	1078	0
07	<i>Aschler Titano</i>	18	0
08	<i>Aschler Titano</i>	1	2
09	<i>Aschler Titano</i>	100	0
10	<i>Aschler Titano</i>	100	0
11	<i>Aschler Titano</i>	100	0
12	<i>Aschler Titano</i>	100	0
13	<i>Aschler Titano</i>	100	0
14	<i>Aschler Titano</i>	100	0
15	<i>Aschler Titano</i>	100	0
16	<i>Aschler Titano</i>	100	0
17	<i>Aschler Titano</i>	100	0
18	<i>Aschler Titano</i>	100	0
19	<i>Aschler Titano</i>	100	0
20	<i>Aschler Titano</i>	100	0
21	<i>Aschler Titano</i>	100	0
22	<i>Aschler Titano</i>	100	0
23	<i>Aschler Titano</i>	100	0
24	<i>Aschler Titano</i>	100	0
25	<i>Aschler Titano</i>	100	0
26	<i>Aschler Titano</i>	100	0
27	<i>Aschler Titano</i>	100	0
28	<i>Aschler Titano</i>	100	0
29	<i>Aschler Titano</i>	100	0
30	<i>Aschler Titano</i>	100	0
31	<i>Aschler Titano</i>	100	0
32	<i>Aschler Titano</i>	100	0
33	<i>Aschler Titano</i>	100	0
34	<i>Aschler Titano</i>	100	0
35	<i>Aschler Titano</i>	100	0
36	<i>Aschler Titano</i>	100	0
37	<i>Aschler Titano</i>	100	0
38	<i>Aschler Titano</i>	100	0
39	<i>Aschler Titano</i>	100	0
40	<i>Aschler Titano</i>	100	0
41	<i>Aschler Titano</i>	100	0
42	<i>Aschler Titano</i>	100	0
43	<i>Aschler Titano</i>	100	0
44	<i>Aschler Titano</i>	100	0
45	<i>Aschler Titano</i>	100	0
46	<i>Aschler Titano</i>	100	0
47	<i>Aschler Titano</i>	100	0
48	<i>Aschler Titano</i>	100	0
49	<i>Aschler Titano</i>	100	0
50	<i>Aschler Titano</i>	100	0
51	<i>Aschler Titano</i>	100	0
52	<i>Aschler Titano</i>	100	0
53	<i>Aschler Titano</i>	100	0
54	<i>Aschler Titano</i>	100	0
55	<i>Aschler Titano</i>	100	0
56	<i>Aschler Titano</i>	100	0
57	<i>Aschler Titano</i>	100	0
58	<i>Aschler Titano</i>	100	0
59	<i>Aschler Titano</i>	100	0
60	<i>Aschler Titano</i>	100	0
61	<i>Aschler Titano</i>	100	0
62	<i>Aschler Titano</i>	100	0
63	<i>Aschler Titano</i>	100	0
64	<i>Aschler Titano</i>	100	0
65	<i>Aschler Titano</i>	100	0
66	<i>Aschler Titano</i>	100	0
67	<i>Aschler Titano</i>	100	0
68	<i>Aschler Titano</i>	100	0
69	<i>Aschler Titano</i>	100	0
70	<i>Aschler Titano</i>	100	0
71	<i>Aschler Titano</i>	100	0
72	<i>Aschler Titano</i>	100	0
73	<i>Aschler Titano</i>	100	0
74	<i>Aschler Titano</i>	100	0
75	<i>Aschler Titano</i>	100	0
76	<i>Aschler Titano</i>	100	0
77	<i>Aschler Titano</i>	100	0
78	<i>Aschler Titano</i>	100	0
79	<i>Aschler Titano</i>	100	0
80	<i>Aschler Titano</i>	100	0
81	<i>Aschler Titano</i>	100	0
82	<i>Aschler Titano</i>	100	0
83	<i>Aschler Titano</i>	100	0
84	<i>Aschler Titano</i>	100	0
85	<i>Aschler Titano</i>	100	0
86	<i>Aschler Titano</i>	100	0
87	<i>Aschler Titano</i>	100	0
88	<i>Aschler Titano</i>	100	0
89	<i>Aschler Titano</i>	100	0
90	<i>Aschler Titano</i>	100	0
91	<i>Aschler Titano</i>	100	0
92	<i>Aschler Titano</i>	100	0
93	<i>Aschler Titano</i>	100	0
94	<i>Aschler Titano</i>	100	0
95	<i>Aschler Titano</i>	100	0
96	<i>Aschler Titano</i>	100	0
97	<i>Aschler Titano</i>	100	0
98	<i>Aschler Titano</i>	100	0
99	<i>Aschler Titano</i>	100	0
100	<i>Aschler Titano</i>	100	0

52	Artagnan	2	0
53	Dennan's	14	
54	Carpellus	24	0
55	The wife of Miles	3	1
56	Clara	238	18
57	Cisternians	4	
58	Donquixote	128	0
59	Duchess	1	8.75
60	Dandini	125	
61	John's	0	5.625
62		8.25	0
63		10.5	8
64		100	0
65		100	0
66	Dennis	1	
67	Duchess		0
68	Handwritten	5.5	
69	Handwritten	1	
70	Duchess	1000	
71	Duchess		
72	Duchess	11	1
73	Duchess Duchess	100	0
74	Duchess		
75	Duchess	1000	
76	Duchess	28.2	
77	Duchess	1	
78	Duchess	1	1
79	Duchess	22	1

50	Hesperomys	2.5	0
51	Hesperomys	2.5	0
52	Hesperomys	2.5	0
53	Hesperomys	2.5	0
54	Hesperomys	2.5	0
55	Hesperomys	2.5	0
56	Hesperomys	2.5	0
57	Hesperomys	2.5	0
58	Hesperomys	2.5	0
59	Hesperomys	2.5	0
60	Hesperomys	2.5	0
61	Hesperomys	2.5	0
62	Hesperomys	2.5	0
63	Hesperomys	2.5	0
64	Hesperomys	2.5	0
65	Hesperomys	2.5	0
66	Hesperomys	2.5	0
67	Hesperomys	2.5	0
68	Hesperomys	2.5	0
69	Hesperomys	2.5	0
70	Hesperomys	2.5	0
71	Hesperomys	2.5	0
72	Hesperomys	2.5	0
73	Hesperomys	2.5	0
74	Hesperomys	2.5	0
75	Hesperomys	2.5	0
76	Hesperomys	2.5	0
77	Hesperomys	2.5	0
78	Hesperomys	2.5	0
79	Hesperomys	2.5	0
80	Hesperomys	2.5	0
81	Hesperomys	2.5	0
82	Hesperomys	2.5	0
83	Hesperomys	2.5	0
84	Hesperomys	2.5	0
85	Hesperomys	2.5	0
86	Hesperomys	2.5	0
87	Hesperomys	2.5	0
88	Hesperomys	2.5	0
89	Hesperomys	2.5	0
90	Hesperomys	2.5	0
91	Hesperomys	2.5	0
92	Hesperomys	2.5	0
93	Hesperomys	2.5	0
94	Hesperomys	2.5	0
95	Hesperomys	2.5	0
96	Hesperomys	2.5	0
97	Hesperomys	2.5	0
98	Hesperomys	2.5	0
99	Hesperomys	2.5	0
100	Hesperomys	2.5	0

100	Nottatus	12	13, 14, 15
101		7	1
102		5, 6	2, 3
103	Parodon	14	1
104		12, 13	11
105	Pavoclinus		
106	Pezomachus	6	
107	Pogonias	5, 6	
108	Pogonias		1
109	Pomacentrus		
110	Pomacentrus		
111	Pomacentrus	5	
112			
113	Pomacentrus		11
114	Pomacentrus		
115	Pomacentrus	1	
116	Pomacentrus		
117	Pomacentrus	1, 2, 3	
118	Pomacentrus	12, 13	1
119	Pomacentrus		
120	Pomacentrus	12	12, 13
121	Pomacentrus	13, 14	
122	Pomacentrus	1	
123	Pomacentrus		
124	Pomacentrus	1	
125	Pomacentrus	1	
126	Pomacentrus	1	
127	Pomacentrus	1	
128	Pomacentrus	1	
129	Pomacentrus	1	
130	Pomacentrus	1	
131	Pomacentrus	1	
132	Pomacentrus	1	
133	Pomacentrus	1	
134	Pomacentrus	1	
135	Pomacentrus	1	
136	Pomacentrus	1	
137	Pomacentrus	1	
138	Pomacentrus	1	
139	Pomacentrus	1	
140	Pomacentrus	1	

137	Melanotos	12	0
138	Nematus	12	0
139	Melan	4	4
140	Melanotos	5	0
141	Melanotos	5	0
142	Melanotos	5	0
143	Nematus	13	
144	Nematus		5
145	Nematus (Morus)	5	
146	Nematus	0	13
147	Nematus	12	
148	Nematus	12	0
149	Nematus	5	
150	Nematus		5
151	Nematus		5
152	Nematus		5
153	Nematus	5	5
154	Nematus		
155	Nematus (Morus)	5	
156	Nematus (Morus)		
157	Nematus	15	0
158	Nematus	10	13
159	Nematus	12	
160	Chrysomel	10	18
161	Chrysomel	5	5
162	Nematus	15	
163	Nematus	10	5
164	Nematus	10	15
165	Phyllon	11	

166	Pasp.	13.25	2
167	Publius	42.5	1
168	Pantikos	50	12
169	Pargassanitis	2	0
170	Papas	10.75	0
171	Parionis	8	0
172	Paspentis	12	0
173	Polemianus	5	0
174	Ppae	0	0
175	Piperae et Doctores		0
176	Pp	0	0
177	Pp		0
178	Pp	0	
179	Pp		0
180	Pp	1.0	10
181	Pp	0	
182	Pp	11.25	0
183	Pp	0.5	0
184	Pp	1	0
185	Scapitum	20	0
186	Schismatis	22	8
188	Schism	1.5	1.75
189	Scapitum	20	1.125
190	Schism	20	0
191	Schism	0	0
192	Schism	0	0
193	Scapitum	10.25	0
194	Schism	1	0

195	Seremba		0
196	Satapuan		0
197	Satapuan	7 015625	0
198	Seremba	5	0
199	Satapuan	5	0
200	Satapuan	4	1
201	Satapuan	23	1005
202	Seremba	8	1
203	Seremba	9	6
204	Seremba	27	35
205	Lahay	19	0
206	Lahay	1	0
207	Lahay	8	0
208	Lahay	1	0
209	Elavina Seremba	60	105
210	Chang	8	0
211	Ch	7	0
212	Ch	15	0
213	Hou	9	0
214	Hou	8	0
215	Global transport	92578	1575
216	without owner	170	443125
Totals		3056,05	663,1

INDICES

1. Rulers and Regnal Years

Μαθητές: Αρ. μαθητών: 2, ανδρ. μαθητές: 0, γυναικ. μαθητές: 2, ανδρ. μαθητές: 0, γυναικ. μαθητές: 2

[1] J. H. Conway and J. J. Lagarias, *Mathematics*, 2nd ed., Cambridge University Press, Cambridge, 1998.

[illegible]
$$d_{\text{max}} = \max_{i \in \{1, \dots, n\}} \{d_i\}.$$

2. Personal Notices

Y. Ishikawa, M. Saito, Y. Yoshikawa, 2007

$$\Delta_{\text{AgCl}} = 130 \text{ kJ mol}^{-1}, \Delta_{\text{AgBr}} = 103 \text{ kJ mol}^{-1}$$
$$h_{\text{eff}} = \frac{1}{2} \left(\frac{1}{h_1} + \frac{1}{h_2} \right) \quad \text{[1]} \quad \left(\frac{1}{h_1} + \frac{1}{h_2} \right)^{-1} \quad \text{[2]}$$

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 $\Delta \kappa_{\text{eff}} = 1.1$ of the $\Delta \kappa_{\text{eff}} = 0.1$ case.

4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843

 $\gamma_{\text{eff}} = \gamma_{\text{eff}}^{\text{eff}} + \gamma_{\text{eff}}^{\text{eff}}$ [illegible]
$$\chi_{\text{residual}}^2 / \text{dof} = \chi_{\text{model}}^2 / \text{dof} - \chi_{\text{data}}^2 / \text{dof} = 1.1$$
$$\chi_{\text{red}} = \chi_{\text{red}}(\text{sp}^2) - \chi_{\text{red}}(\text{C}_6\text{H}_6) = 11$$

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$$\chi = (2, 1, 0, \dots, 0) \text{ and } (1, 1, 1, \dots, 1) \text{ in } H_1(\text{Grass}(2, n), \mathbb{Z})$$
$$\lambda_{\text{max}}(\text{nm}), \text{ ext.} \times 10^4: 214 (1.4)$$
$$\Delta_{\text{max}} = 2 \cdot \text{length}(\text{code}) \cdot \left(\frac{1}{2} + \frac{1}{2} \cos \frac{2\pi}{2^k} \right)$$
[illegible]
$$Y_{i,t} = \alpha_0 + \alpha_1 \text{SIZE}_{i,t} + \alpha_2 \text{LEV}_{i,t} + \alpha_3 \text{ROA}_{i,t} + \alpha_4 \text{BONUS}_{i,t} + \alpha_5 \text{DUAL}_{i,t} + \alpha_6 \text{BIG4}_{i,t} + \alpha_7 \text{INDUSTRY}_{i,t} + \alpha_8 \text{AGE}_{i,t} + \alpha_9 \text{GROWTH}_{i,t} + \alpha_{10} \text{RISK}_{i,t} + \alpha_{11} \text{LQ}_{i,t} + \alpha_{12} \text{SIZE}_{i,t-1} + \alpha_{13} \text{LEV}_{i,t-1} + \alpha_{14} \text{ROA}_{i,t-1} + \alpha_{15} \text{BONUS}_{i,t-1} + \alpha_{16} \text{DUAL}_{i,t-1} + \alpha_{17} \text{BIG4}_{i,t-1} + \alpha_{18} \text{INDUSTRY}_{i,t-1} + \alpha_{19} \text{AGE}_{i,t-1} + \alpha_{20} \text{GROWTH}_{i,t-1} + \alpha_{21} \text{RISK}_{i,t-1} + \alpha_{22} \text{LQ}_{i,t-1} + \alpha_{23} \text{SIZE}_{i,t-2} + \alpha_{24} \text{LEV}_{i,t-2} + \alpha_{25} \text{ROA}_{i,t-2} + \alpha_{26} \text{BONUS}_{i,t-2} + \alpha_{27} \text{DUAL}_{i,t-2} + \alpha_{28} \text{BIG4}_{i,t-2} + \alpha_{29} \text{INDUSTRY}_{i,t-2} + \alpha_{30} \text{AGE}_{i,t-2} + \alpha_{31} \text{GROWTH}_{i,t-2} + \alpha_{32} \text{RISK}_{i,t-2} + \alpha_{33} \text{LQ}_{i,t-2} + \alpha_{34} \text{SIZE}_{i,t-3} + \alpha_{35} \text{LEV}_{i,t-3} + \alpha_{36} \text{ROA}_{i,t-3} + \alpha_{37} \text{BONUS}_{i,t-3} + \alpha_{38} \text{DUAL}_{i,t-3} + \alpha_{39} \text{BIG4}_{i,t-3} + \alpha_{40} \text{INDUSTRY}_{i,t-3} + \alpha_{41} \text{AGE}_{i,t-3} + \alpha_{42} \text{GROWTH}_{i,t-3} + \alpha_{43} \text{RISK}_{i,t-3} + \alpha_{44} \text{LQ}_{i,t-3} + \alpha_{45} \text{SIZE}_{i,t-4} + \alpha_{46} \text{LEV}_{i,t-4} + \alpha_{47} \text{ROA}_{i,t-4} + \alpha_{48} \text{BONUS}_{i,t-4} + \alpha_{49} \text{DUAL}_{i,t-4} + \alpha_{50} \text{BIG4}_{i,t-4} + \alpha_{51} \text{INDUSTRY}_{i,t-4} + \alpha_{52} \text{AGE}_{i,t-4} + \alpha_{53} \text{GROWTH}_{i,t-4} + \alpha_{54} \text{RISK}_{i,t-4} + \alpha_{55} \text{LQ}_{i,t-4} + \alpha_{56} \text{SIZE}_{i,t-5} + \alpha_{57} \text{LEV}_{i,t-5} + \alpha_{58} \text{ROA}_{i,t-5} + \alpha_{59} \text{BONUS}_{i,t-5} + \alpha_{60} \text{DUAL}_{i,t-5} + \alpha_{61} \text{BIG4}_{i,t-5} + \alpha_{62} \text{INDUSTRY}_{i,t-5} + \alpha_{63} \text{AGE}_{i,t-5} + \alpha_{64} \text{GROWTH}_{i,t-5} + \alpha_{65} \text{RISK}_{i,t-5} + \alpha_{66} \text{LQ}_{i,t-5} + \alpha_{67} \text{SIZE}_{i,t-6} + \alpha_{68} \text{LEV}_{i,t-6} + \alpha_{69} \text{ROA}_{i,t-6} + \alpha_{70} \text{BONUS}_{i,t-6} + \alpha_{71} \text{DUAL}_{i,t-6} + \alpha_{72} \text{BIG4}_{i,t-6} + \alpha_{73} \text{INDUSTRY}_{i,t-6} + \alpha_{74} \text{AGE}_{i,t-6} + \alpha_{75} \text{GROWTH}_{i,t-6} + \alpha_{76} \text{RISK}_{i,t-6} + \alpha_{77} \text{LQ}_{i,t-6} + \alpha_{78} \text{SIZE}_{i,t-7} + \alpha_{79} \text{LEV}_{i,t-7} + \alpha_{80} \text{ROA}_{i,t-7} + \alpha_{81} \text{BONUS}_{i,t-7} + \alpha_{82} \text{DUAL}_{i,t-7} + \alpha_{83} \text{BIG4}_{i,t-7} + \alpha_{84} \text{INDUSTRY}_{i,t-7} + \alpha_{85} \text{AGE}_{i,t-7} + \alpha_{86} \text{GROWTH}_{i,t-7} + \alpha_{87} \text{RISK}_{i,t-7} + \alpha_{88} \text{LQ}_{i,t-7} + \alpha_{89} \text{SIZE}_{i,t-8} + \alpha_{90} \text{LEV}_{i,t-8} + \alpha_{91} \text{ROA}_{i,t-8} + \alpha_{92} \text{BONUS}_{i,t-8} + \alpha_{93} \text{DUAL}_{i,t-8} + \alpha_{94} \text{BIG4}_{i,t-8} + \alpha_{95} \text{INDUSTRY}_{i,t-8} + \alpha_{96} \text{AGE}_{i,t-8} + \alpha_{97} \text{GROWTH}_{i,t-8} + \alpha_{98} \text{RISK}_{i,t-8} + \alpha_{99} \text{LQ}_{i,t-8} + \alpha_{100} \text{SIZE}_{i,t-9} + \alpha_{101} \text{LEV}_{i,t-9} + \alpha_{102} \text{ROA}_{i,t-9} + \alpha_{103} \text{BONUS}_{i,t-9} + \alpha_{104} \text{DUAL}_{i,t-9} + \alpha_{105} \text{BIG4}_{i,t-9} + \alpha_{106} \text{INDUSTRY}_{i,t-9} + \alpha_{107} \text{AGE}_{i,t-9} + \alpha_{108} \text{GROWTH}_{i,t-9} + \alpha_{109} \text{RISK}_{i,t-9} + \alpha_{110} \text{LQ}_{i,t-9} + \alpha_{111} \text{SIZE}_{i,t-10} + \alpha_{112} \text{LEV}_{i,t-10} + \alpha_{113} \text{ROA}_{i,t-10} + \alpha_{114} \text{BONUS}_{i,t-10} + \alpha_{115} \text{DUAL}_{i,t-10} + \alpha_{116} \text{BIG4}_{i,t-10} + \alpha_{117} 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+ \alpha_{145} \text{LEV}_{i,t-13} + \alpha_{146} \text{ROA}_{i,t-13} + \alpha_{147} \text{BONUS}_{i,t-13} + \alpha_{148} \text{DUAL}_{i,t-13} + \alpha_{149} \text{BIG4}_{i,t-13} + \alpha_{150} \text{INDUSTRY}_{i,t-13} + \alpha_{151} \text{AGE}_{i,t-13} + \alpha_{152} \text{GROWTH}_{i,t-13} + \alpha_{153} \text{RISK}_{i,t-13} + \alpha_{154} \text{LQ}_{i,t-13} + \alpha_{155} \text{SIZE}_{i,t-14} + \alpha_{156} \text{LEV}_{i,t-14} + \alpha_{157} \text{ROA}_{i,t-14} + \alpha_{158} \text{BONUS}_{i,t-14} + \alpha_{159} \text{DUAL}_{i,t-14} + \alpha_{160} \text{BIG4}_{i,t-14} + \alpha_{161} \text{INDUSTRY}_{i,t-14} + \alpha_{162} \text{AGE}_{i,t-14} + \alpha_{163} \text{GROWTH}_{i,t-14} + \alpha_{164} \text{RISK}_{i,t-14} + \alpha_{165} \text{LQ}_{i,t-14} + \alpha_{166} \text{SIZE}_{i,t-15} + \alpha_{167} \text{LEV}_{i,t-15} + \alpha_{168} \text{ROA}_{i,t-15} + \alpha_{169} \text{BONUS}_{i,t-15} + \alpha_{170} \text{DUAL}_{i,t-15} + \alpha_{171} \text{BIG4}_{i,t-15} + \alpha_{172} 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+ \alpha_{200} \text{LEV}_{i,t-18} + \alpha_{201} \text{ROA}_{i,t-18} + \alpha_{202} \text{BONUS}_{i,t-18} + \alpha_{203} \text{DUAL}_{i,t-18} + \alpha_{204} \text{BIG4}_{i,t-18} + \alpha_{205} \text{INDUSTRY}_{i,t-18} + \alpha_{206} \text{AGE}_{i,t-18} + \alpha_{207} \text{GROWTH}_{i,t-18} + \alpha_{208} \text{RISK}_{i,t-18} + \alpha_{209} \text{LQ}_{i,t-18} + \alpha_{210} \text{SIZE}_{i,t-19} + \alpha_{211} \text{LEV}_{i,t-19} + \alpha_{212} \text{ROA}_{i,t-19} + \alpha_{213} \text{BONUS}_{i,t-19} + \alpha_{214} \text{DUAL}_{i,t-19} + \alpha_{215} \text{BIG4}_{i,t-19} + \alpha_{216} \text{INDUSTRY}_{i,t-19} + \alpha_{217} \$$

Abstract: *See page 106*

$$V_{\alpha} = \sum_{i=1}^n \alpha_i \log \left(\frac{1}{\alpha_i} \right) \geq \sum_{i=1}^n \alpha_i \log \left(\frac{1}{\alpha_i} \right) = V_{\alpha} \log \left(\frac{1}{\alpha_i} \right) = 0$$
A consequence of the above is that $\mathcal{Y}_{\text{con}}(x) \leq \mathcal{Y}_{\text{con}}(x+1) \leq 1$.

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3. Geographical

$$Y_j = \sum_{i=1}^n x_i y_{ij} \quad (1)$$

Угловое напряжение в их направлении было равно 15°.

$$Y_{10} = 10Y_{100} = 10^2 = 100$$

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$$|K_{21}| \rightarrow 0 \text{ as } \nu \rightarrow \infty, \text{ so } \lim_{\nu \rightarrow \infty} |K_{21}|$$

1. $\gamma_{00}(0,0,0,0) = 1$; $\gamma_{00}(0,0,0,0) = 1$

February 1998

[illegible]
$$\left| \frac{1}{n} \sum_{i=1}^n \log \frac{f_i(x)}{f(x)} \right| \rightarrow 0 \text{ in probability.}$$

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Figure 1

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4. Religion

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5. Official and Military Terms and Titles

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[illegible][illegible]
$$0.11 \pm 0.02 \text{ (stat)} \pm 0.02 \text{ (syst)} \pm 0.02 \text{ (th)} \pm 0.02 \text{ (mod)} \pm 0.02 \text{ (unf)} \pm 0.02 \text{ (MC)}$$
[illegible]

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doi:10.1186/1745-6215-5-10

$$(\mathbf{N}_1 + \mathbf{I})^d (\mathbf{N}_2 + \mathbf{I})^d (\mathbf{N}_3 + \mathbf{I})^d \mathbf{z} = \mathbf{0}, \quad \mathbf{z} \in \mathbb{R}^3. \quad (1.2)$$

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basis

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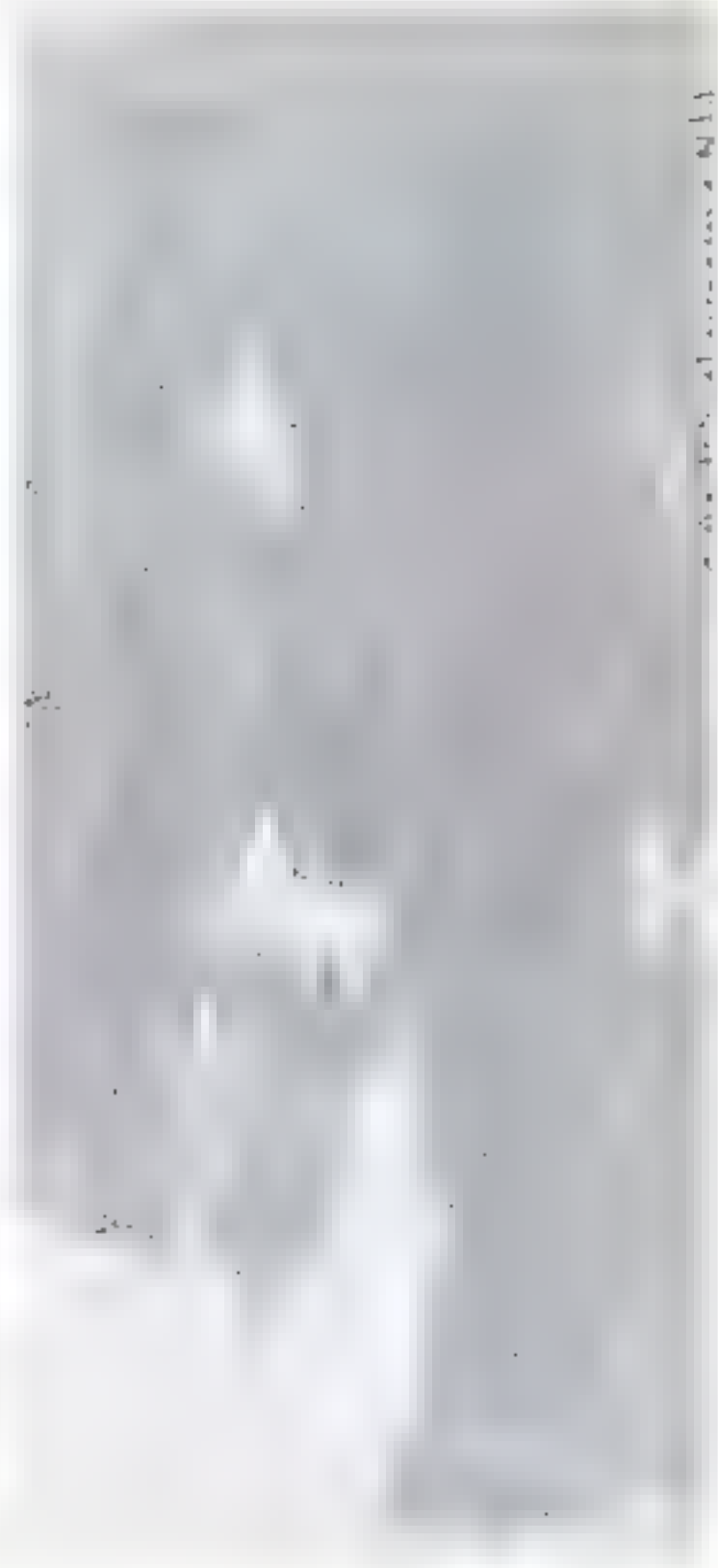


Fig. 1. The same as in Fig. 1.



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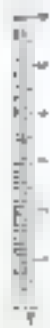
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